■■ CloudClearing Weekly Monitoring Report

Report Date:	October 20, 2025
Analysis Period:	2025-10-13 to 2025-10-20
Regions Monitored:	15
Analysis Confidence:	MEDIUM

■ EXECUTIVE SUMMARY

**Market Status:** ■ WEAK MARKET - Limited opportunities detected

Total Changes Detected:	**398,098**
Total Area Changed:	**65,226.6 hectares**
Critical Alerts:	**26**
Investment Opportunities:	**3**

■ MONITORING RESULTS

Most Active Regions:

Region	Changes	Area (hectares)
Semarang Port Expansion	24,154	4700.2
Bandung North Expansion	22,458	3013.3
Yogyakarta Urban Core	12,516	1086.4
Jakarta North Sprawl	12,338	17988.2
Tegal Brebes Coastal	11,308	1687.9

Regional Activity Overview:

Top Regions by Change Activity
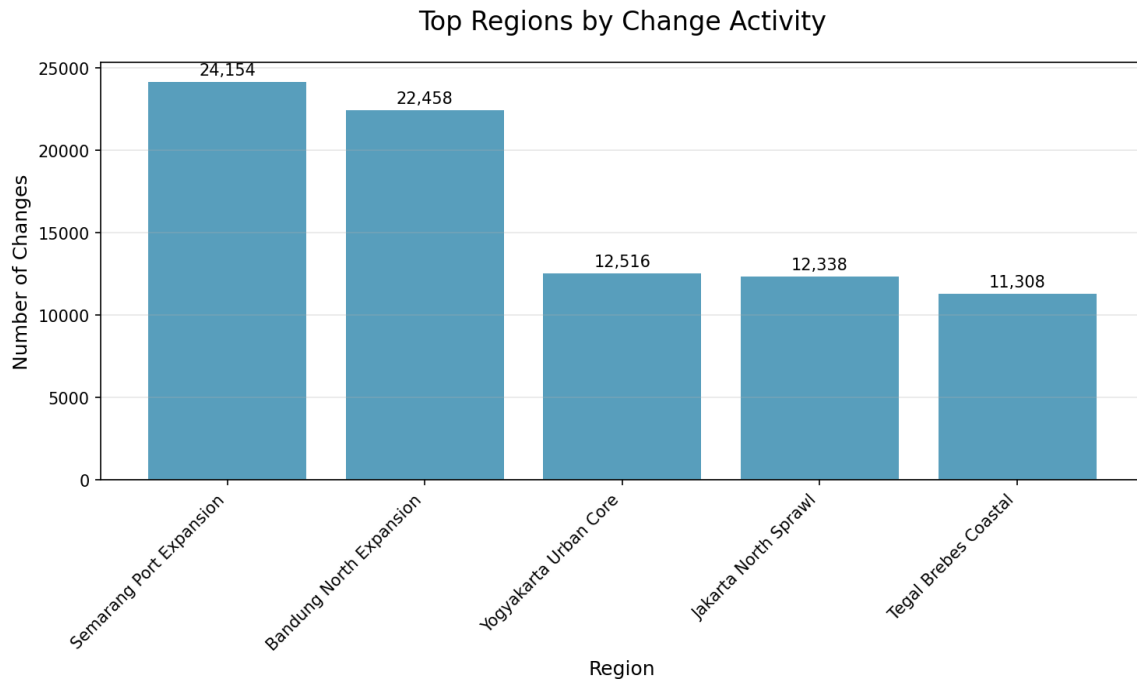
■ INVESTMENT OPPORTUNITIES

■ **TOP OPPORTUNITY:** BANDUNG_NORTH_EXPANSION (56.2/100, yogyakarta_region)

■ Top Investment Opportunities:

Region	Score	Confidence	Investment Intelligence
Bandung North Expansion	**56.2**/100	94%	**Price correction** (0.0%) • Current: Rp 4,512,500/m² • **High development**: 22,458 changes detected • **Good connectivity** (Score: 85)
Semarang Port Expansion	**56.2**/100	94%	**Price correction** (0.0%) • Current: Rp 1,995,000/m² • **High development**: 24,154 changes detected • **Good connectivity** (Score: 85)
Jakarta North Sprawl	**48.2**/100	94%	**Price correction** (0.0%) • Current: Rp 7,315,000/m² • **High development**: 12,338 changes detected • **Good connectivity** (Score: 85)

■ INVESTMENT OPPORTUNITIES / SATELLITE IMAGERY

Investment Methodology: Our analysis combines satellite-detected land use changes with market intelligence and infrastructure data. Each region receives an **investment score (0-100)** based on:
(1) Development Activity - volume and pace of land use changes detected via satellite, **(2) Infrastructure Quality** - proximity to major roads, ports, airports, and active construction projects, **(3) Market Dynamics** - property price trends and real estate market heat.

Confidence Levels: Each score includes a confidence percentage (20-90%) that reflects data completeness. Higher confidence means we have real-time market data, detailed infrastructure analysis, and high-quality satellite imagery. Lower confidence means we're relying primarily on satellite-detected changes with limited market/infrastructure data. Typical confidence is 40-60% during early analysis phases.

Imagery Notes: Satellite imagery shows before/after comparisons where available. NDVI (vegetation index) maps highlight **vegetation loss (red)** indicating land clearing for potential construction sites, and **vegetation gain (green)** showing revegetation.

■ BUY - Bandung North Expansion - Investment Score: 56.2/100 (94% confidence)

Development Activity: 22,458 land use changes detected across 3013.3 hectares
Change Type Breakdown:
• Urban conversion (agriculture → urban): 11,517 sites (51.3%)
• Construction activity (bare → built): 6,329 sites (28.2%)
• Other significant changes: 2,917 sites (13.0%)
• Land clearing (vegetation → bare earth): 1,048 sites (4.7%)
• Urban densification (expansion): 647 sites (2.9%)
Key Investment Factors:
• Excellent infrastructure access (85/100)
• ■■ 5109 major roads within range (35/35 pts)
• ✍■ Airport: Bandar Udara Internasional Husein Sastranegara (18km, 20/20 pts)
Score Composition:
• Market momentum: 0.0% price trend
• Infrastructure: 85/100 quality rating
• Development activity: 22,458 satellite-detected changes
Infrastructure Breakdown (85/100):
• Primary: Jalan Merdeka (18.0km)
• Primary: Jalan Cicendo (18.2km)
• Secondary: Jalan Tamansari (17.9km)
Confidence Breakdown (94%):
• ■ Satellite imagery: High-resolution change detection active
• ■ Market data: Real-time property prices available
• ■ Infrastructure data: Live road/airport/port data available
High confidence - comprehensive data across all sources

■ Financial Projection

■ Data Sources & Quality:
• Data Sources: **Satellite Sentinel2, Regional Benchmarks, Infrastructure Fallback**

Land Value Analysis:
• Current Market Value: **Rp 4,512,500/m²**
• 18-Month Projection: **Rp 5,374,460/m²** (6.0% annual appreciation)
• Expected Value Gain: **Rp 861,960/m²** over 18 months

Return on Investment:
• 3-Year ROI: **1.2%**
• 5-Year ROI: **13.7%**
• Break-Even Point: **2.8 years**

Investment Sizing:
• Recommended Plot Size: **500 m²** (0.05 hectares)
• Total Acquisition Cost: **Rp 2,256,250,000** (~$150,417 USD)
• Projected 18-Month Value: **Rp 2,687,229,850**
• Estimated Gain: **Rp 430,979,850** (~$28,732 USD)

Development Considerations:

- Development Cost Index: **79/100** (High cost region)
- Terrain Difficulty: **Difficult**

Note: Financial projections are estimates based on current market data, satellite-detected development activity, and infrastructure analysis. Actual returns may vary based on market conditions, regulatory changes, and development timing. This is not financial advice.

Note: Satellite imagery unavailable for this period. Analysis based on statistical change detection.

Vegetation Change Analysis (NDVI): Red = vegetation loss/land clearing (potential construction sites), Green = vegetation gain/revegetation
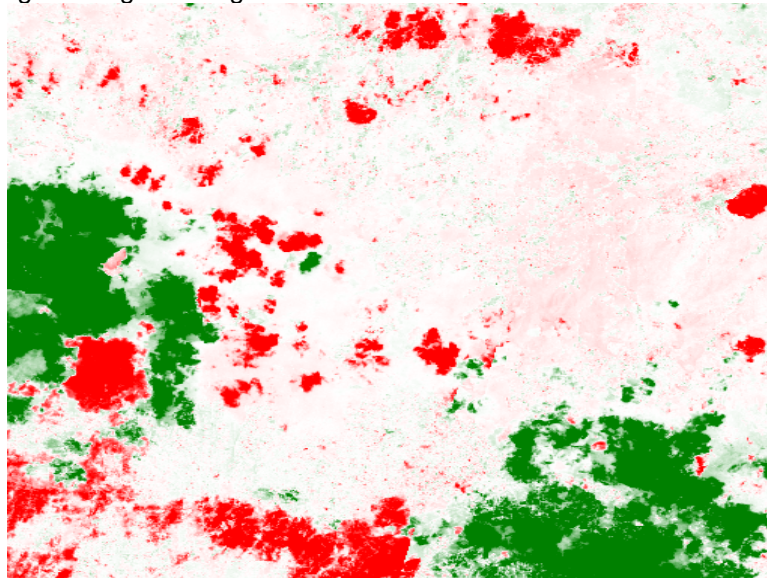
■ BUY - Semarang Port Expansion - Investment Score: 56.2/100 (94% confidence)

Development Activity: 24,154 land use changes detected across 4700.2 hectares
Change Type Breakdown:
- Urban conversion (agriculture → urban): 12,593 sites (52.1%)
- Land clearing (vegetation → bare earth): 4,393 sites (18.2%)
- Construction activity (bare → built): 3,590 sites (14.9%)
- Other significant changes: 2,079 sites (8.6%)
- Urban densification (expansion): 1,499 sites (6.2%)
Key Investment Factors:
- Excellent infrastructure access (85/100)
- ■■ 3559 major roads within range (35/35 pts)
- ✈■ Airport: Bandar Udara Ahmad Yani (9km, 20/20 pts)
Score Composition:
- Market momentum: 0.0% price trend
- Infrastructure: 85/100 quality rating
- Development activity: 24,154 satellite-detected changes
Infrastructure Breakdown (85/100):
- Primary: Jalan Simpang Lima (5.4km)
- Secondary: Jalan Mayor Jenderal Donald Isaac Panjaitan (4.4km)
- Trunk: Jalan Pengapon (1.7km)
Confidence Breakdown (94%):
- ■ Satellite imagery: High-resolution change detection active
- ■ Market data: Real-time property prices available
- ■ Infrastructure data: Live road/airport/port data available
High confidence - comprehensive data across all sources

■ Financial Projection

■ Data Sources & Quality:
• Data Sources: **Satellite Sentinel2, Regional Benchmarks, Infrastructure Fallback**

Land Value Analysis:
• Current Market Value: **Rp 1,995,000/m²**
• 18-Month Projection: **Rp 2,376,077/m²** (6.0% annual appreciation)
• Expected Value Gain: **Rp 381,077/m²** over 18 months

Return on Investment:
• 3-Year ROI: **-15.0%**
• Break-Even Point: **5.8 years**

Investment Sizing:
• Recommended Plot Size: **537 m²** (0.05 hectares)
• Total Acquisition Cost: **Rp 1,070,661,896** (~$71,377 USD)
• Projected 18-Month Value: **Rp 1,275,175,449**
• Estimated Gain: **Rp 204,513,553** (~$13,634 USD)

Development Considerations:
• Development Cost Index: **81/100** (High cost region)
• Terrain Difficulty: **Difficult**

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Note: Satellite imagery unavailable for this period. Analysis based on statistical change detection.

Vegetation Change Analysis (NDVI): Red = vegetation loss/land clearing (potential construction sites), Green = vegetation gain/revegetation
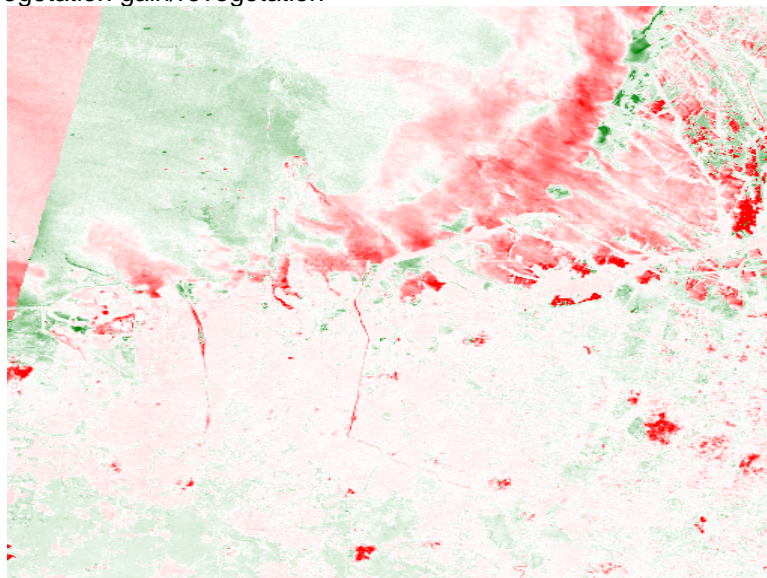
■ BUY - Jakarta North Sprawl - Investment Score: 48.2/100 (94% confidence)

Development Activity: 12,338 land use changes detected across 17988.2 hectares
Change Type Breakdown:
• Land clearing (vegetation → bare earth): 7,902 sites (64.0%)
• Urban conversion (agriculture → urban): 2,443 sites (19.8%)
• Construction activity (bare → built): 857 sites (6.9%)
• Urban densification (expansion): 655 sites (5.3%)

• Other significant changes: 481 sites (3.9%)

Key Investment Factors:
• Excellent infrastructure access (85/100)
• ■■ 15241 major roads within range (35/35 pts)
• ⤳■ Airport: Bandar Udara Halim Perdanakusuma (26km, 20/20 pts)

Score Composition:
• Market momentum: 0.0% price trend
• Infrastructure: 85/100 quality rating
• Development activity: 12,338 satellite-detected changes

Infrastructure Breakdown (85/100):
• Primary: Jalan Pasar Senen (14.6km)
• Secondary: Jalan Kesenian (13.5km)
• Secondary: Jalan Lapangan Banteng Utara (13.7km)

Confidence Breakdown (94%):
• ■ Satellite imagery: High-resolution change detection active
• ■ Market data: Real-time property prices available
• ■ Infrastructure data: Live road/airport/port data available

High confidence - comprehensive data across all sources

■ Financial Projection

■ Data Sources & Quality:
• Data Sources: **Satellite Sentinel2, Regional Benchmarks, Infrastructure Fallback**

Land Value Analysis:
• Current Market Value: **Rp 7,315,000/m²**
• 18-Month Projection: **Rp 9,011,533/m²** (7.2% annual appreciation)
• Expected Value Gain: **Rp 1,696,533/m²** over 18 months

Return on Investment:
• 3-Year ROI: **11.0%**
• 5-Year ROI: **27.6%**
• Break-Even Point: **1.5 years**

Investment Sizing:
• Recommended Plot Size: **500 m²** (0.05 hectares)
• Total Acquisition Cost: **Rp 3,657,500,000** (~$243,833 USD)
• Projected 18-Month Value: **Rp 4,505,766,595**
• Estimated Gain: **Rp 848,266,595** (~$56,551 USD)

Development Considerations:
• Development Cost Index: **71/100** (High cost region)
• Terrain Difficulty: **Difficult**

Note: Financial projections are estimates based on current market data, satellite-detected development activity, and infrastructure analysis. Actual returns may vary based on market conditions, regulatory changes, and development timing. This is not financial advice.

Note: Satellite imagery unavailable for this period. Analysis based on statistical change detection.

Vegetation Change Analysis (NDVI): Red = vegetation loss/land clearing (potential construction sites), Green = vegetation gain/revegetation
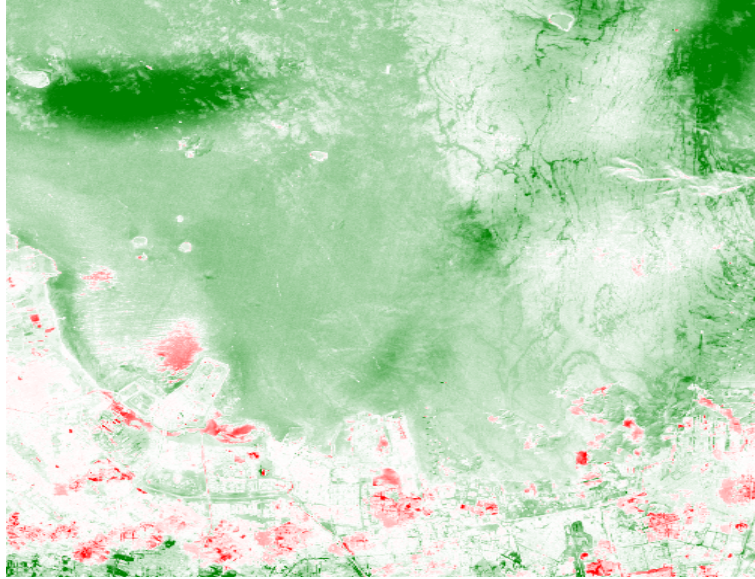
■ Complete Regional Analysis

Region	Changes	Area (ha)	Score	Investment Notes	Period
Yogyakarta Urban Core	12,516	1086.4	29.9/100	**Watch** (94% confidence): Stagnant prices	June 23-30, 2025
Tegal Brebes Coastal	11,308	1687.9	20.3/100	**Pass** (94% confidence): Stagnant prices, Poor infrastructure	June 23-30, 2025
Yogyakarta Urban	12,516	1086.4	N/A	Not scored	June 23-30, 2025
Yogyakarta Periurban	0	0.0	N/A	Not scored	June 23-30, 2025
Sleman North	63,805	8633.8	N/A	Not scored	June 23-30, 2025
Bantul South	57,564	5877.1	N/A	Not scored	June 23-30, 2025
Kulonprogo West	0	0.0	N/A	Not scored	June 23-30, 2025
Gunungkidul East	65,017	6043.2	N/A	Not scored	June 23-30, 2025
Magelang Corridor	44,386	5380.5	N/A	Not scored	June 23-30, 2025
Solo Expansion	25,456	2616.1	N/A	Not scored	June 23-30, 2025
Semarang Industrial	24,154	4700.2	N/A	Not scored	June 23-30, 2025
Surakarta Suburbs	22,426	2413.0	N/A	Not scored	June 23-30, 2025

■ REGIONAL BREAKDOWN

Yogyakarta Region Details:

Semarang Port Expansion
Changes: 24,154 | Area: 4700.2 ha | Density: 5.1 changes/ha
■ **Satellite Imagery Available:** Before (Unknown) | After (Unknown)
Note: High-resolution satellite images saved to output/satellite_images/weekly/

Bandung North Expansion
Changes: 22,458 | Area: 3013.3 ha | Density: 7.5 changes/ha
■ **Satellite Imagery Available:** Before (Unknown) | After (Unknown)
Note: High-resolution satellite images saved to output/satellite_images/weekly/

Yogyakarta Urban Core
Changes: 12,516 | Area: 1086.4 ha | Density: 11.5 changes/ha
■ **Satellite Imagery Available:** Before (Unknown) | After (Unknown)
Note: High-resolution satellite images saved to output/satellite_images/weekly/

Jakarta North Sprawl
Changes: 12,338 | Area: 17988.2 ha | Density: 0.7 changes/ha
■ **Satellite Imagery Available:** Before (Unknown) | After (Unknown)
Note: High-resolution satellite images saved to output/satellite_images/weekly/

Tegal Brebes Coastal
Changes: 11,308 | Area: 1687.9 ha | Density: 6.7 changes/ha
■ **Satellite Imagery Available:** Before (Unknown) | After (Unknown)
Note: High-resolution satellite images saved to output/satellite_images/weekly/

■ CRITICAL ALERTS

Critical Alerts (26):

- Critical: 12338 changes detected in jakarta_north_sprawl
- Critical: 17988.2 hectares changed in jakarta_north_sprawl
- Critical: 22458 changes detected in bandung_north_expansion
- Critical: 3013.3 hectares changed in bandung_north_expansion
- Critical: 24154 changes detected in semarang_port_expansion
- Critical: 4700.2 hectares changed in semarang_port_expansion
- Critical: 12516 changes detected in yogyakarta_urban_core
- Critical: 1086.4 hectares changed in yogyakarta_urban_core
- Critical: 11308 changes detected in tegal_brebes_coastal
- Critical: 1687.9 hectares changed in tegal_brebes_coastal