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**Organisation de Développement Agricole et Environnemental**
***Climat – Sécurité Alimentaire – Autonomisation des Jeunes et des Femmes***
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**REPORT**

Democratic Republic of the Congo

Haut-Uele Province

# Environmental Monitoring & Agroforestry Impact Report

Project:

## Community-Led Forest Monitoring & Advocacy Against Mining and Charcoal-Driven Deforestation

REPORT

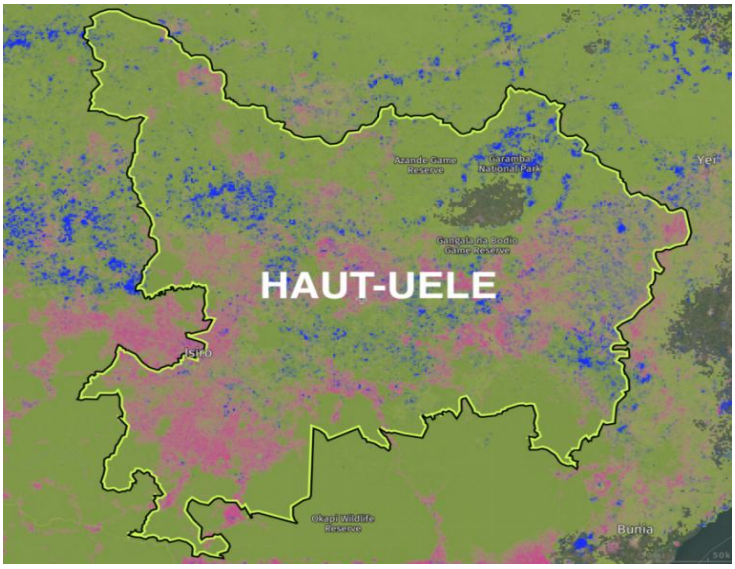
January - February 2026

WORLD RESOURCES INSTITUTE

Rapport réalisé avec l'appui technique et financier du World Resources Institute (WRI) à travers le programme Global Forest Watch (GFW), dans le cadre du Small Grants Fund 2026

GLOBAL FOREST WATCH

# 1. Executive Summary




Haut-Uele Province remains one of the most forest-rich regions of the Democratic Republic of the Congo. However, between 2001 and 2024, the province lost approximately 950,000 hectares of tree cover, equivalent to 11% of its 2000 baseline forest area.

This loss corresponds to an estimated 660 million metric tons of $CO_2$ equivalent emissions. Of this total, 280,000 hectares were humid primary forest irreplaceable ecosystems that store high carbon density and support critical biodiversity.

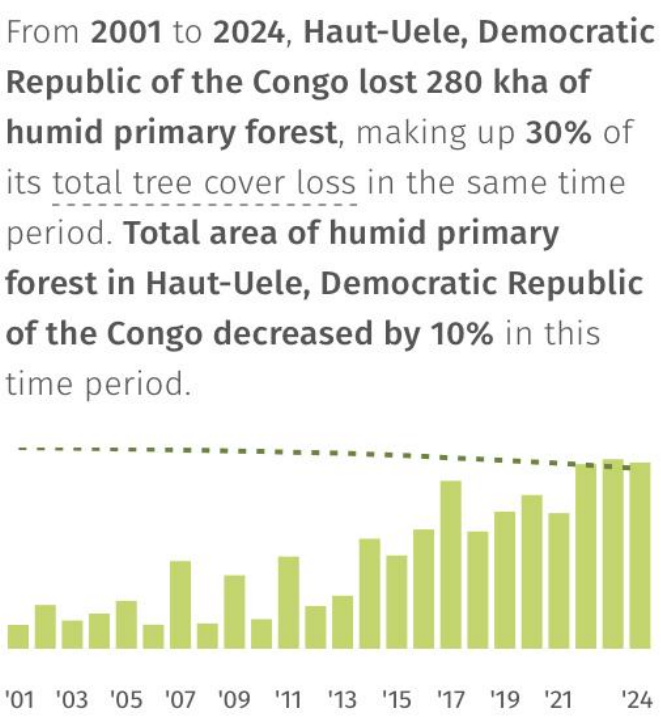
Although 78,000 hectares of tree cover gain were recorded between 2000 and 2020, this gain represents only 0.88% of baseline forest cover and does not compensate for the ecological and structural loss of primary forests.

Within this provincial context, Alphome Community Farms, in partnership with the World Resources Institute (WRI) through Global Forest Watch (GFW), implemented community-led forest monitoring and agroforestry mitigation initiatives in January 2026 across Watsa and Faradje Territories. This report integrates provincial satellite evidence with localized ground verification, confirming that disturbance patterns are concentrated in artisanal mining corridors and charcoal production zones.

Community-based forest monitoring remains a scalable and cost-effective mechanism to detect, verify, and mitigate forest degradation in eastern DRC.

## 2. Provincial Forest Baseline (2000 – 2024)

### 2.1 Tree Cover Extent and Baseline Conditions




As of 2010, Haut-Uele Province maintained 8.7 million hectares of tree cover, representing approximately 95% of total land area under a >30% canopy density threshold. Only 440,000 hectares were categorized as non-tree land cover.

This baseline situates Haut-Uele as a key ecological stronghold within the Congo Basin forest system. The province supports carbon sequestration, biodiversity corridors, watershed stability, and climate regulation functions of regional and global significance.

However, high forest cover does not imply immunity from degradation pressures. Longitudinal satellite data demonstrates that disturbance has persisted, particularly in areas associated with extractive and charcoal-related activities.

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## 2.2 Total Tree Cover Loss (2001 – 2024)

Between 2001 and 2024, Haut-Uele experienced 950,000 hectares of tree cover loss. This loss represents 11% of the province's 2000 baseline forest cover. https://gfw.global/B6cFk6

The cumulative impact of this loss includes:

- 660 million metric tons of $CO_2$ equivalent emissions
- Habitat fragmentation
- Reduced ecosystem resilience
- Increased vulnerability to fire and secondary degradation

Satellite analysis indicates that tree cover loss intensified after 2015. It is important to note that methodologies for detecting forest loss changed around 2015, which may result in underreporting of pre-2015 disturbance. Comparisons across methodological breaks should therefore be interpreted with caution.

**Tree cover loss is spatially concentrated along:**

- Artisanal mining corridors
- Transport routes
- Charcoal production zones
- Expanding settlement peripheries

These patterns reflect human-driven pressures rather than natural disturbance cycles.

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## Charcoal production

In Watsa and Faradje Territories, charcoal remains the dominant household energy source due to limited electrification, absence of LPG infrastructure, and rapid settlement growth around artisanal mining zones.

The number of people is growing rapidly, increasing demand for charcoal is most available cooking source of energy.

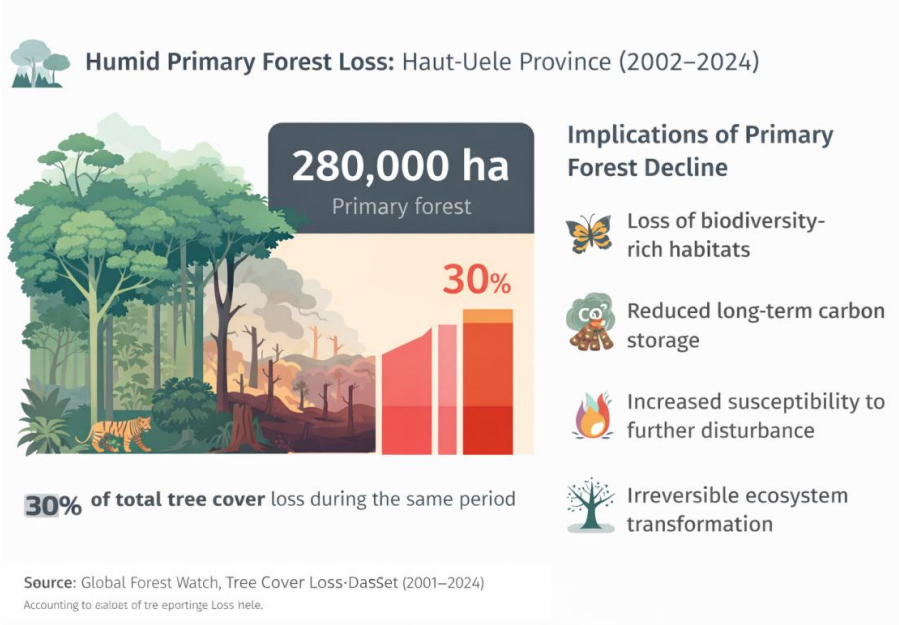
For many households, charcoal production also provides quick cash income as formal jobs are limited. Weak regulation and expanding settlements around artisanal mining sites further increase pressure on nearby forests.

As a result, charcoal becomes both an energy solution and a driver of localized forest degradation, especially along mining and road corridors.

# 2.3 Primary Forest Loss (2002 – 2024)

Humid primary forests represent the most ecologically valuable forest systems in Haut-Uele. From 2002 to 2024, the province lost 280,000 hectares of humid primary forest.

Primary forest loss accounts for approximately 30% of total tree cover loss during the same period. This indicates that degradation is not limited to secondary forests or previously disturbed areas.




**Primary forest decline has several implications:**

- Loss of biodiversity-rich habitats
- Reduced long-term carbon storage
- Increased susceptibility to further disturbance
- Irreversible ecosystem transformation

A 10% reduction in primary forest extent signals growing vulnerability within areas previously considered relatively intact.

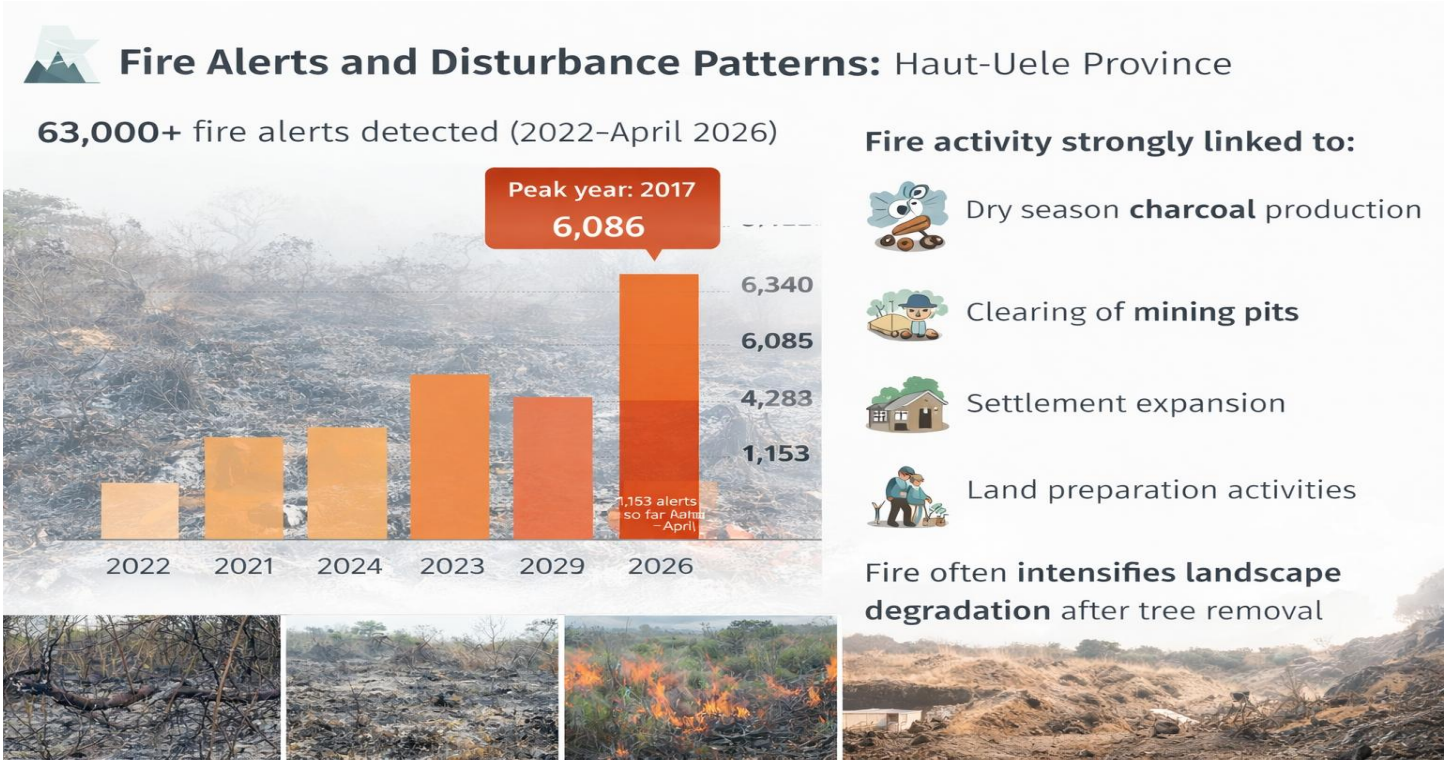
## 2.4 Tree Cover Gain (2000 – 2020)

From 2000 to 2020, 78,000 hectares of tree cover gain were recorded in Haut-Uele. While this reflects some regrowth or plantation expansion, the increase represents only 0.88% of baseline tree cover.

Tree cover gain does not equate to ecological recovery. Much of the gain likely reflects:

- Secondary forest regrowth
- Plantation or managed systems
- Agroforestry expansion

Secondary regrowth does not replicate the ecological complexity of humid primary forest systems. Therefore, gain data should be interpreted as partial recovery rather than full ecosystem restoration.




# 3. Fire Alerts and Disturbance Patterns

### 3.1 Historical Fire Alert Analysis

Fire alert data from VIIRS satellite monitoring reveals persistent seasonal disturbance across Haut-Uele. Between 2022 and early 2026, more than 63,000 high-confidence fire alerts were recorded. In the most recent 12-month monitoring window, 2,183 fire alerts were detected. In early 2026 alone, 1,153 alerts have already been recorded.

The peak fire year was 2017, with 6,086 alerts. Fire activity corresponds strongly with:

- Dry season charcoal production
- Settlement expansion
- Clearing of mining pits
- Land preparation activities

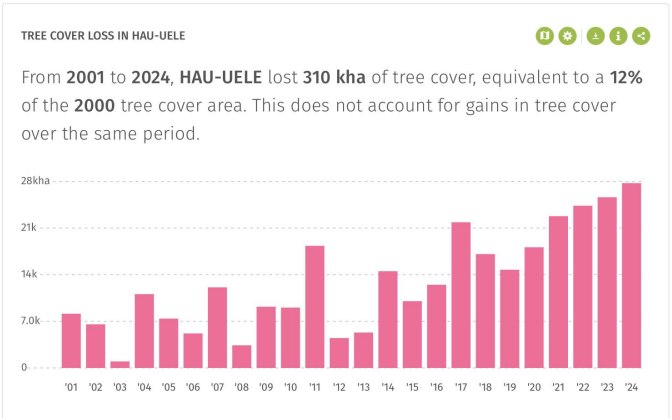
Fire often acts as a secondary disturbance mechanism, intensifying degradation following tree removal.

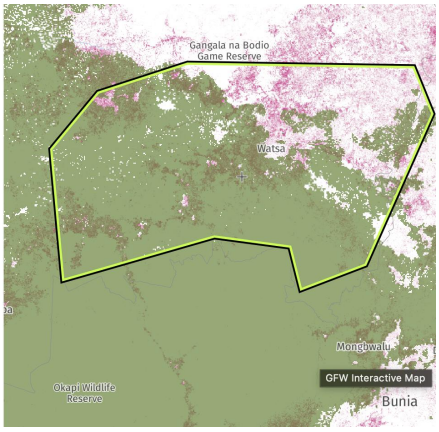
## 3.2 Tree Cover Loss Due to Fire

While only 320 hectares of tree cover loss have been directly attributed to fire between 2001 and 2024, fire is frequently associated with broader extractive disturbance processes.

The majority of tree cover loss (950,000 hectares) is linked to other drivers, particularly mining and land conversion.

Fire should therefore be interpreted as a symptom of broader degradation systems rather than a standalone driver.




### 4. Localized Monitoring: Watsa & Faradje Territories

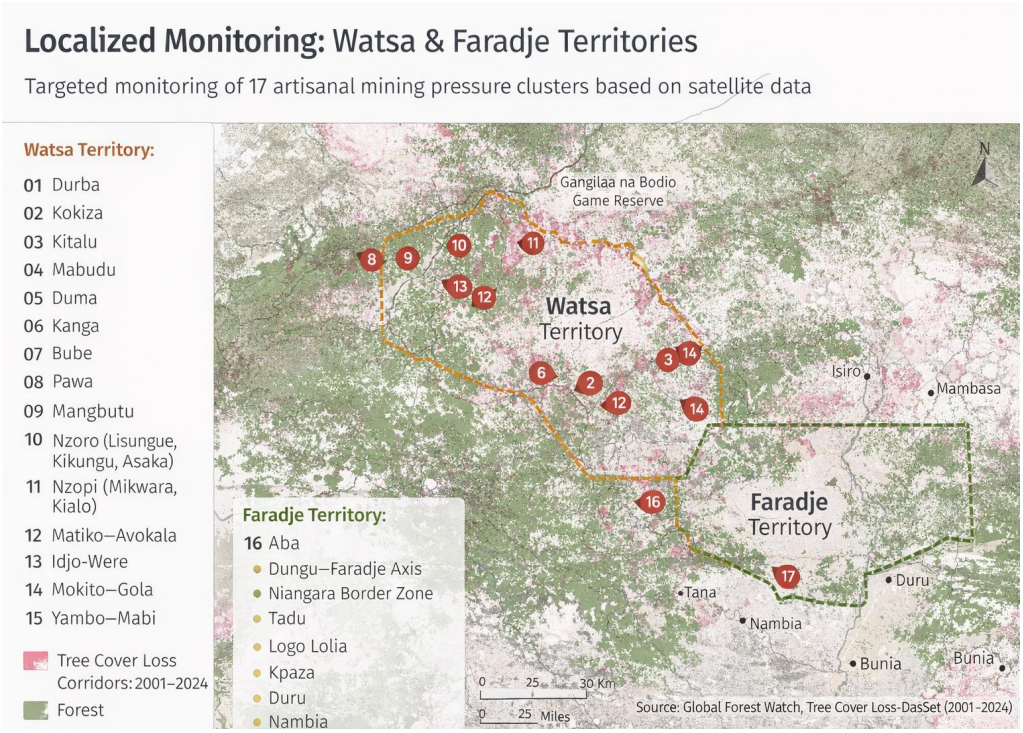
Provincial-scale data becomes actionable only when localized. Alphome Community Farms operationalized satellite analysis through targeted monitoring across 17 mining pressure clusters.

### 4.1 Mining Pressure Zones Identified

**Monitoring zones include:**

Watsa Territory:
Durba, Kokiza, Kitalu, Mabudu, Duma, Kanga, Bube, Pawa, Mangbutu, Nzoro (Lisungue, Kikungu, Asaka), Nzopi (Mikwara, Kialo), Matiko – Avokala, Idjo – Were, Motiko – Gola, Yambo – Mabi, Mafu – Jwaza.

**Faradje Territory:**
Aba, Dungu – Faradje Axis, Niangara Border Zone, Tadu, Logo Lolia, Kpaza, Duru, Nambia.




These zones align spatially with historical tree cover loss corridors detected through GFW datasets.

## 4.2 Field Verification Activities (January 2026)


**During January 2026, community forest monitors:**

- Verified satellite alerts on-site
- Collected geo-tagged photographic evidence
- Conducted patrols along mining-adjacent corridors
- Reported findings to territorial authorities
- Field observations confirm:
- Expansion of artisanal gold pits
- Timber harvesting for pit reinforcement
- Charcoal production to supply mining camps
- Settlement growth around mining hubs

Community monitoring bridges the gap between remote sensing detection and on-the-ground accountability.

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## 5. Agroforestry Mitigation and Community Response

### 5.1 Linking Monitoring with Livelihood Solutions

Alphome's approach integrates forest monitoring with agroforestry as a mitigation strategy.

Agroforestry systems:

- Stabilize soil
- Provide income alternatives
- Reduce charcoal dependency
- Increase food security

Women-led agroforestry plots demonstrate leadership in sustainable land use.

Youth engagement in digital monitoring enhances technological capacity within communities.

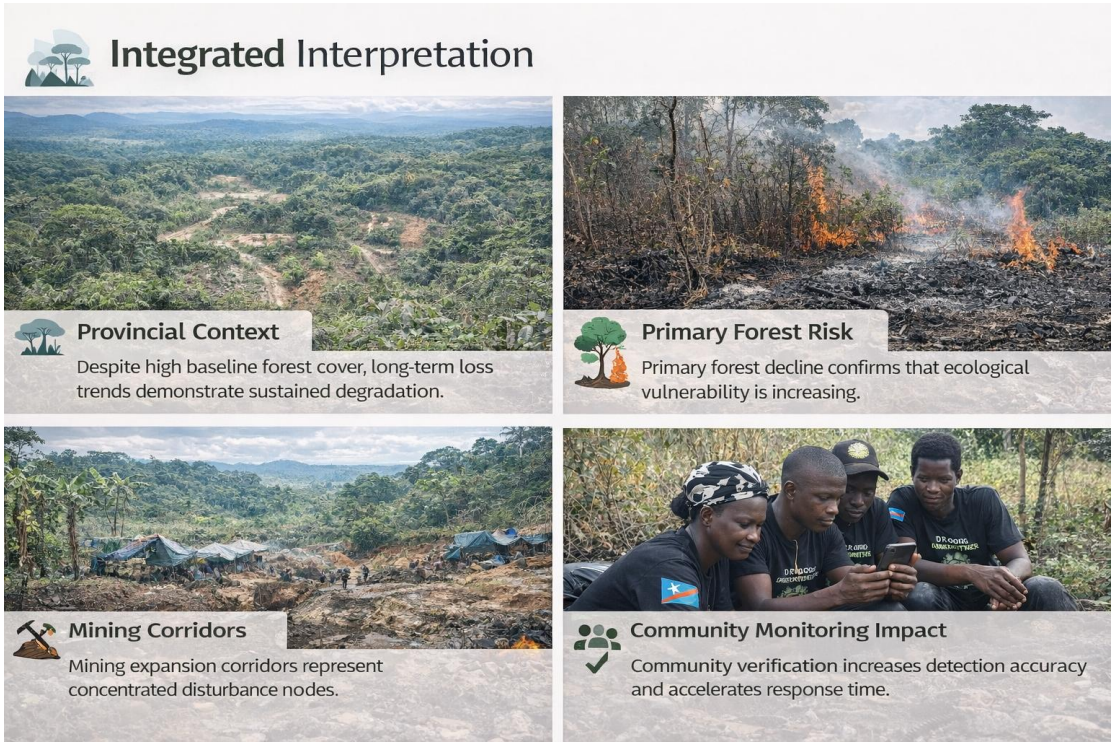
# 5.2 Women and Youth Leadership

Women play central roles in:

- Agroforestry plot management
- Community dialogue facilitation
- Environmental stewardship education
- Youth contribute through:
  - Smartphone-based monitoring
  - Alert verification
  - Mapping exercises
  - Data reporting

This generational and gender-inclusive model strengthens sustainability.


### 6. Integrated Interpretation




#### 6.1 Provincial Context

Despite high baseline forest cover long-term loss trends demonstrate sustained degradation.

#### 6.2 Primary Forest Risk

Primary forest decline confirms that ecological vulnerability is increasing.

#### 6.3 Mining Corridors

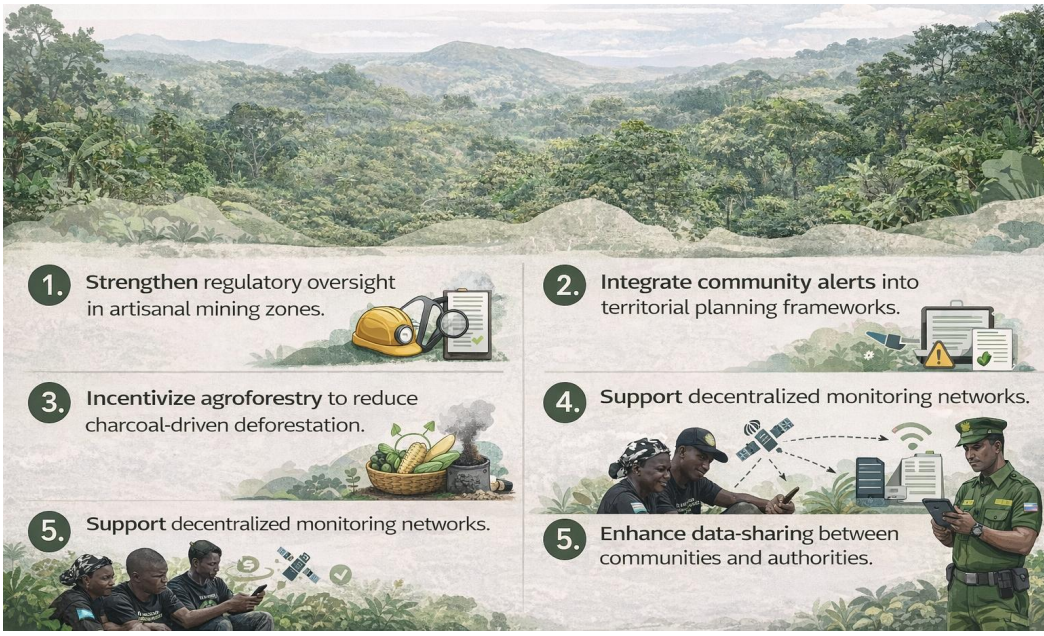
Mining expansion corridors represent concentrated disturbance nodes.

#### 6.4 Community Monitoring Impact

Community verification increases detection accuracy and accelerates response time.

## 7. Policy Implications

1. Strengthen regulatory oversight in artisanal mining zones.
2. Integrate community alerts into territorial planning frameworks.
3. Incentivize agroforestry to reduce charcoal-driven deforestation.
4. Support decentralized monitoring networks.
5. Enhance data-sharing between communities and authorities.



# 8. Strategic Outlook

In 2026, Alphome Community Farms will:


# 9. Methodological Annex

Data Sources:

- Global Forest Watch Tree Cover Loss (2001 – 2024)
- Primary Forest Loss Dataset
- VIIRS Fire Alerts (Visible Infrared Imaging Radiometer Suite)
- Tree Cover Gain Dataset
- 30% canopy density threshold baseline

**Methodological Considerations:**

- Tree cover loss detection methods changed around 2015.
- Pre-2015 loss may be underreported.
- Tree cover gain does not imply primary forest restoration.
- Fire alerts indicate disturbance presence, not necessarily permanent loss.

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# 10. Conclusion

Haut-Uele remains a critical ecological asset within the Congo Basin. However, sustained tree cover loss particularly within humid primary forests signals structural vulnerability.

January - February 2026 findings confirm that artisanal mining expansion and charcoal production among others are concentrated drivers of disturbance within Watsa and Faradje Territories.

Community-based forest monitoring, combined with agroforestry mitigation and inclusive leadership, provides a scalable and locally anchored response.

Alphome Community Farms will continue integrating satellite intelligence with ground-based stewardship to protect remaining forest ecosystems while strengthening community resilience.