

GHANA'S FOREST UNDER THREAT: EXAMINING TWO DECADES OF DEFORESTATION (2001-2022)

1.0. Overview of Ghana's forest ecosystems

Ghana's forest ecosystems are facing significant threats, with deforestation and land degradation causing substantial biodiversity loss. The high forest zone, which harbours over 80% of Ghana's biodiversity, is crucial for conservation efforts (FAO, 2023). As of 2023, Ghana's forest area was approximately 7.9 million hectares, covering about 36% of the country's land area. This represents a decline attributed to agricultural encroachment and mining activities (European Space Agency, 2023). The country's forest ecosystems play a vital role in maintaining ecological balance, contributing to carbon cycles, and supporting rural livelihoods (Owusu et al., 2021).

In response, various initiatives like the Green Ghana Initiative (2021), the Forest Plantation Strategy (2016–2040), and the REDD+ Strategy (2016–2035) have been launched to restore degraded landscapes, increase forest carbon stocks, reduce deforestation and improve livelihood. These programs aim to address forest degradation, support rural communities, and combat climate change (Forestry Commission, 2023; Ministry of Lands and Natural Resources, 2021). Additionally, advances in technology, such as Geographic Information Systems (GIS), are being used for improved forest monitoring, which is essential for guiding policy decisions while preserving and safeguarding forest ecosystem (Asare et al., 2023).

However, the persistence of deforestation, driven by factors like urbanization, agricultural expansion, and illegal mining, continues to undermine these efforts. Forest governance in Ghana has evolved from traditional systems under chiefs to a formalized state-led framework, with laws like the Forest Ordinance (1927) and Forest Improvement Act (1960), but challenges persist in enforcing sustainable practices and addressing land tenure issues (FAO & UNEP, 2020). These ongoing challenges highlight the need for more comprehensive policies, stronger community involvement, and sustainable resource management to ensure the long-term viability of Ghana's forest ecosystems (Ros-Tonen & Derkyi, 2018).

2.0. Trends in forest loss in Ghana

Tropical forests are vital carbon sinks, storing 1.02 Pg of carbon annually when intact and absorbing 1.72 Pg when re-growing, while also supporting half of the Earth's plant and animal species (Malhi et al., 2014). However, human disturbances have led to significant forest loss and environmental degradation worldwide (Addo-Fordjour and Ankomah, 2017). Global forest cover has been declining, with an annual rate of 3.3 million hectares of forest lost between 2010 and 2015 (Keenan et al., 2015).

In Ghana, deforestation, particularly in forest reserves, has been on the rise despite conservation efforts. Annual deforestation rates for the periods 2000–2005, 2005–2010, and 2010–2015 were 0.5%, 0.4%, and 0.6%, respectively (Acheampong et al., 2019). Between 2001 and 2022, Ghana lost up to 18,000 hectares of forest, with humid primary forest loss accounting for 9.3% of the country's tree cover loss (Sasu, 2024; GFW, 2024).

According to the Land-use Land-cover map (Fig. 1), savannas and deciduous needleleaf forests completely replaced grasslands and croplands in 2001, with savannas taking up a greater percentage of the maps in 2012 and 2022. In comparison to 2001, there was an increase in open shrublands in both 2012 and 2022; however, there was a slight rise in evergreen broadleaf forests in 2022 compared to 2012. Additionally, compared to 2001, Woody Savannas and Urban and Built-up Lands increased in 2012 and 2022. Satellite remote sensing plays a crucial role in tracking these changes (Gibbs et al., 2010).

3.0. Major Causes of Deforestation

Deforestation is caused by several factors, most notably agricultural expansion, logging, mining, and the demand for wood fuel. In Ghana, agricultural expansion, fueled by a growing population and the need for sustainable energy, contributes significantly to forest loss. Cash crops like cocoa, oil palm, and rubber require large areas of forest to be cleared, often through shifting cultivation (Ofosu, 2023). While improving agricultural productivity is essential for food security and economic development, it competes with forest ecosystems for land (Amban et al., 2021).

Consequently logging, both legal and illegal, further exacerbates forest degradation. Unauthorized logging often exceeds sustainable limits, while legal logging activities can still result in

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deforestation if not properly regulated (Asamoah et al., 2020). Additionally, mining, especially surface mining, leads to direct forest loss and environmental disruption through soil erosion and habitat destruction. Mining impacts extend beyond the direct footprint, contributing to deforestation through infrastructure, settlements, and associated activities (Kramer et al., 2023).

Charcoal production, driven by the demand for fuel in Ghana, also depletes forests, especially in the northern regions (Ofosu, 2023). Therefore, addressing deforestation in Ghana requires policies to reduce illegalities in resource extraction, implement sustainable agricultural practices, and engage all stakeholders, including law enforcement and NGOs, in forest management and environmental sustainability (Kyere et al., 2021).

4.0. Socio-economic consequences of deforestation in Ghana

Depletion of forest resources and NTFPs due to deforestation has resulted in income loss, further pushing vulnerable communities into poverty (Mantey & Teye, 2021). A research carried out in the Ashanti region, where a majority (62%) of the respondents attributed unemployment to the decline in forest resources (Adom et al., 2024). Industries like logging, sawmilling, and ecotourism have also been severely impacted (Is there a % in decline or reference). Similarly, the hospitality sector, relying on forest biodiversity, has also suffered due to reduced tourist interest.

Furthermore, the destruction of farms, often caused by illegal mining activities, has forced rural populations into urban areas, contributing to the growth of slums and unplanned urban centers (Buor, 2022). The displacement has resulted in social upheaval, including conflicts over resources and increased vigilantism (Adom et al., 2024).

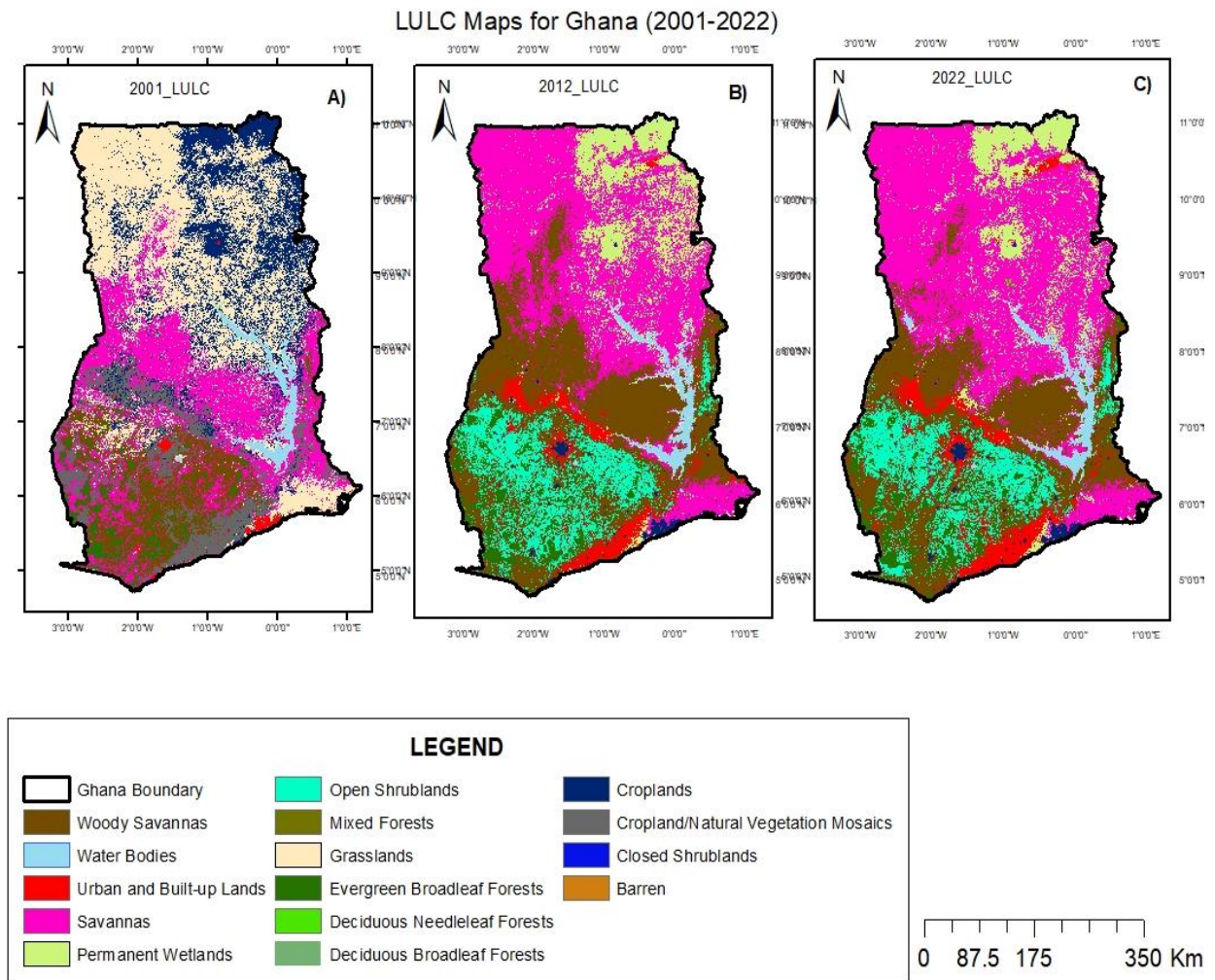


Figure 1: Land Use Land Cover maps for Ghana between 2001 to 2022 (Generated by SoSA Research & Publication Team)

5.0. Government and NGOs interventions

To address deforestation in Ghana, both the Government and NGOs have introduced various interventions, although challenges remain. The government has implemented policies such as the Forest and Wildlife Policy (2016) and the Timber Resource Management Act to promote sustainable forest management, afforestation, and reforestation. Programs like the National Forest Plantation Development Program aim to restore degraded forests. These efforts, however, face issues such as limited resources and corruption, which hinder effective enforcement (Wiggins et al., 2004; Kyere-Boateng et al., 2021). Additionally, economic incentives like agroforestry and

community-based forest management are used to align economic benefits with conservation (Zulu et al., 2020).

Local NGOs, including A Rocha Ghana and Friends of the Earth-Ghana, focus on environmental education and advocacy to encourage sustainable practices. International organizations like WWF, USAID, and The Nature Conservancy provide technical assistance, funding, and policy support, including collaborative programs like REDD+ that promote sustainable forest management and carbon credit opportunities (Ansah, 2020).

Community-based initiatives such as CREMAs and the "Green Ghana Project" empower local populations to actively participate in forest restoration and management. However, challenges such as financial constraints, weak enforcement, land-use conflicts, and corruption continue to limit the full effectiveness of these interventions (Le et al., 2012; Bansah et al., 2024).

6.0. Strategies for sustainable forest management

Ghana has implemented several strategies to ensure the sustainability of its forest resources, including reforestation initiatives like the Green Ghana Initiative, which has mobilized citizens to plant millions of trees, and the Forest Plantation Strategy, focusing on afforestation and reforestation to support rural livelihoods. The REDD+ Strategy aims to reduce emissions from deforestation and enhance forest carbon stocks, while the Voluntary Partnership Agreement with the EU ensures sustainable timber exports. Technological advancements, including GIS technologies, have improved forest monitoring. Despite these efforts, challenges such as land tenure disputes and regulatory enforcement persist.

In conclusion, it is crucial to strengthen policy frameworks, increase funding for research, engage communities, promote sustainable agricultural practices, and raise public awareness about the importance of forests for biodiversity, climate regulation, and livelihoods. Additionally, implementing clear and equitable land tenure policies, coupled with dispute resolution mechanisms, can help address land tenure conflicts, which are a key driver of deforestation (Kyere-Boateng et al., 2021; Wiggins et al., 2004; Zulu et al., 2020).

7.0. References

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