

Illegal Charcoal Production in Zimbabwe: Environmental Threats and Policy Imperatives

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Abstract

Illegal charcoal production in Zimbabwe's GEF 6 target landscapes (notably Muzarabani and Hurungwe districts) is a critical environmental crisis that demands urgent policy action and livelihood support. Unregulated felling of native woodlands—especially Mopane and other Miombo species—is driving tens of thousands of hectares of deforestation annually. At the same time, rural communities depend on charcoal income for basic needs, creating a dilemma of poverty versus conservation. We argue that Zimbabwe must strengthen forest laws and enforcement, expand community-based patrols, offer sustainable livelihood alternatives, and promote clean energy access. Coordinated domestic and regional action (e.g., harmonizing woodfuel regulations with neighbors) can protect forests and support vulnerable communities. This paper presents evidence from Muzarabani and Hurungwe and recommends a multi-pronged response: tighten legislation, boost enforcement (including community ranger programs), expand alternative forest-based enterprises (NTFPs, agroforestry, ecotourism) and energy solutions (improved cookstoves, renewables), and intensify regional cooperation to curb illegal charcoal trade.

Keywords: charcoal production, deforestation, forest policy, sustainable livelihoods, Zimbabwe, Miombo woodlands

1. Introduction

Zimbabwe faces a severe electricity deficit, with generation capacity of only 1,585 MW against peak demand exceeding 2,500 MW (1), resulting in power shortages that cost the economy 6.1% of GDP annually (12). High electricity tariffs and poverty (about 38% of the population) mean many urban and rural households turn to firewood and charcoal. Rapid urbanization in Harare, Bulawayo and other cities is creating new charcoal markets, while commercial sectors (especially poultry farms) rely on charcoal for low-cost heating. With formal electricity access remaining limited—only ~53% nationwide in 2020 (12) and rural electrification slow, demand for woodfuel is widespread.

Muzarabani (Mashonaland Central) and Hurungwe (Mashonaland West) districts are now major charcoal hotspots. Forestry Commission report that over 1000 bags of illegal charcoal were recently seized in Muzarabani during a single enforcement sweep (Mujuru pers. com.). Muzarabani's dense mopane woodlands (on fragile Kalahari sands) have long supplied charcoal to urban markets. In the past, charcoal for Harare and Bulawayo reportedly came largely from Mozambique and Zambia, but export bans in those countries (5; 9; 6) have shifted production within Zimbabwean borders. The result is a thriving informal charcoal economy as evidenced by trucks and motorcycles which regularly shuttle sacks of charcoal at night from the two districts and others. Therefore, Zimbabwe now confronts domestic and transboundary charcoal pressure—local woodlands are being stripped, even as cross-border trade continues to flood cities with low-cost charcoal.

2. Drivers of Charcoal Demand

Several interlinked factors drive Zimbabwe's charcoal trade:

2.1. Energy Security and Economic Factors

Chronic power deficits and high electricity prices make charcoal an accessible cooking fuel. World Bank analysis links Zimbabwe's power shortages to an annual economic loss of ~6.1% of GDP (12). In this context, wood-based energy becomes a necessity for poor households.

2.2. Urbanization and Socioeconomic Pressures

Growing urban populations and limited incomes push consumers toward cheap fuels (8; 3). Charcoal often sells for a fraction of the cost of electricity or LPG, creating a strong price incentive for urban households to buy charcoal despite its illegality.

2.3. Industrial Demand

Industries like poultry and tobacco curing traditionally use wood/charcoal. Frequent load-shedding in processing plants drives producers to biomass alternatives. Thus a portion of demand comes from commercial activity rather than just household use (11).

These drivers create a structural dependence on charcoal where villages with little alternative income use forest harvesting as a coping strategy. Surveys in Hurungwe and Muzarabani show that many families subsist on revenues from charcoal production and sales. Therefore, Zimbabwe’s energy gap and poverty together make woodfuel use a deeply entrenched practice. Table 1 summarizes the key drivers and their relative importance in different contexts.

Table 1: Key drivers of charcoal demand and their contextual importance

Driver	Urban Areas	Rural Areas	Industrial
Power shortages	High	Medium	High
Electricity costs	High	Low*	High
Poverty levels	Medium	High	Low
Alternative fuels access	Medium	Low	Medium
Cultural preferences	Medium	High	Low

*Low impact due to limited grid connectivity in rural areas

Importance rated as: High, Medium, Low based on survey data

3. Environmental and Socioeconomic Impacts

3.1. Forest Degradation and Deforestation

Unregulated charcoal production is destroying Zimbabwe’s woodlands at an alarming rate. Mopane (*Colophospermum mopane*) and other hardwoods—targeted for high calorific value—are harvested at a rate faster than they can regrow (10; 2; 7). The Forestry Commission estimates roughly 262,000 hectares of forest cover are lost each year to charcoal-driven deforestation (4).

Remote sensing studies utilizing Landsat imagery demonstrate that charcoal production areas show forest cover loss rates of 2–5% annually, significantly exceeding natural regeneration capacity (2; 7). The preferential targeting of mature trees with diameters exceeding 10cm has disrupted natural forest age structures, compromising long-term ecosystem resilience (10). Table 2 summarizes the forest loss estimates for key charcoal

production areas.

Table 2: Forest cover loss in charcoal production hotspots (2000-2024)

District	Total Area (ha)	Forest Loss (ha/year)	Annual Rate (%)	Primary Species Affected
Muzarabani	426600	18.85–80.89	0.11–0.47	<i>C. mopane</i>
Hurungwe	1984300	92.16–161.58	0.43–0.75	Miombo species
Total	2,410,900	111.01–242.47	0.54–1.22	—

Source: Global Forest Change 2000-2024

Annual rates vary by proximity to urban markets and enforcement intensity

Figure 1 illustrates traditional earth-mound kilns commonly used in Muzarabani District, demonstrating the low-efficiency production methods that contribute to excessive deforestation.

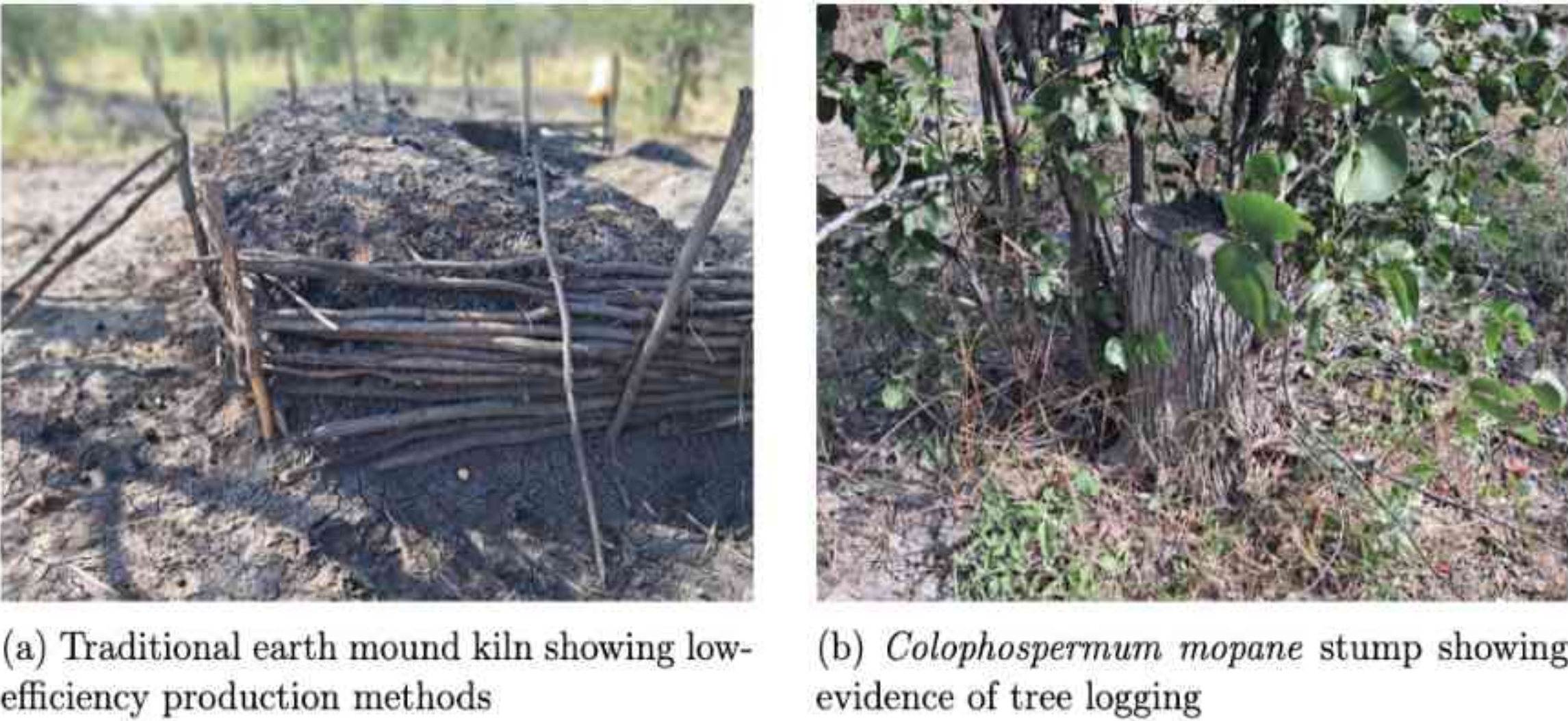


Figure 1: Evidence of illegal charcoal production in Muzarabani District

3.2. Livelihood Dependencies and Poverty Traps

Charcoal provides immediate income to rural households with few alternatives. Villagers in Muzarabani and Hurungwe spend weeks cutting and burning trees in small family kilns, earning enough to pay school fees or buy food. The charcoal value chain also creates informal jobs for transporters, vendors and laborers. However, this reliance is a double-edged sword—it perpetuates a poverty trap by degrading the natural capital that poor families depend on during times of food shortages especially as exacerbated by climate change. Over-harvesting undermines the very ecosystems that provide firewood, making future earnings unsustainable. Consequently, charcoal is a short-term livelihood strategy that undermines long-term community resilience.

Figure 2 shows evidence of the extensive illegal charcoal movement through Muzarabani, illustrating the scale and openness of unregulated cross-border trade.



Figure 2: Evidence of illegal charcoal movement through Muzarabani, illustrating the scale and openness of unregulated cross-border trade

4. Regulatory Framework and Enforcement Challenges

4.1. Legal and Institutional Gaps

Zimbabwe’s current legal framework offers insufficient regulation of charcoal production, use and trade. The Forest Act (Chapter 19:05) generally prohibits illegal logging, but its penalties are weak. It prescribes fines up to Level 8 (about US\$500) or two years’ jail for forest offences, yet authorities admit that culprits simply pay fines and resume activities. This points to the fact that the punishment is not punitive enough to deter offenders. The Communal Lands Forest Produce Act similarly lacks clarity on charcoal regulation. There is no separate law specifically defining charcoal production or trade. As a result, enforcement agencies (Forestry Commission, EMA, police, local councils) have no clear mandate or coordinated procedures for tackling charcoal production.

4.2. Enforcement Challenges

In practice, enforcement has been episodic. The Forestry Commission has conducted targeted "blitz" operations, for example, a recent campaign in Muzarabani seized 1,043

bags of charcoal and ticketed several offenders (Mujuru pers. com.). These multi-agency raids demonstrate commitment, but also highlight challenges. Networks of illegal charcoal makers simply adapt (destroying evidence, communicating via Mozambican networks, and moving clandestinely) to evade weak patrols. Border inspections are minimal, so illicit imports from Mozambique go largely unchecked.

Forestry Commission now calls for stronger laws and enforcement. They propose raising penalties to mandatory jail terms, since existing fines are easily borne by many rural offenders. They also seek explicit legal definitions of charcoal and standardized regulations. Without reform, enforcement will remain a game of "catch-and-release" with offenders paying tiny penalties and quickly returning to clearing forests. Table 3 compares current and proposed enforcement mechanisms.

Table 3: Current versus proposed enforcement mechanisms

Aspect	Current System	Proposed System
Legal penalties	Fines up to US\$500 or 2 years jail	Mandatory jail terms (minimum 5 years)
Charcoal definition	Vague references in Forest Act	Explicit definition and regulation
Enforcement frequency	Episodic "blitz" operations	Continuous patrol system
Inter-agency coordination	Limited coordination	Integrated multi-agency unit
Community involvement	Minimal	Community ranger programs
Border control	Weak inspection	Enhanced cross-border monitoring
Asset forfeiture	Fine-based system	Mandatory confiscation

5. Policy Position and Rationale

We reaffirm that unregulated charcoal production is environmentally unsustainable and must be curtailed. Our position is based on ecological urgency and long-term socio-economic interest. We posit that continued forest depletion will ultimately worsen rural poverty and national ecological stability.

5.1. Key Policy Positions

1. The perpetrators of charcoal production and trade argue Zimbabwe's own forests are a minor source compared to Mozambican imports. However, even if cross-border charcoal supplies a portion of urban demand, it does not justify further domestic deforestation. Zimbabwean woodlands—especially near Harare—still contribute a significant share of charcoal for local markets. A dual strategy is needed—clamp down on illegal local production and negotiate with neighbors to control imports.
2. While plantations of exotic species (e.g., wattle) can legally supply some charcoal, indigenous woodlands are ecologically limited. Forestry authorities currently allow charcoal only from exotic timber plantations. We caution against expanding charcoal from native species. Field inventories show mature mopane and miombo trees are already scarce in Muzarabani and Hurungwe. Formalizing more harvesting of these species risks locking in further decline.
3. Rather than legalizing charcoal from declining forests, we advocate for substitutes. This includes accelerating biomass-based enterprises that restore landscapes, such as using invasive *Lantana camara* and *Vernonanthura polyanthes* for sustainable charcoal (turning weeds into products). It also means providing viable income paths—e.g., beekeeping, wild fruit and medicinal plant harvesting, and sustainable woodcraft as income sources that do not degrade forests. In places like Hurungwe, community ranger groups (e.g., the all-female Akashinga group) have already shown that enforcement can go hand-in-hand with local empowerment.

In summary, our position calls for no compromise on forest protection. We recognize that poor communities need jobs, but we emphasize sustainable jobs over short-lived gains. Regulated charcoal may work for exotics, but for native forests only strict protection combined with livelihood programs can secure both forests and community well-being.



Figure 3: Signage for the Akashinga conservation initiative for the protection of forest resources in Hurungwe

6. Recommendations

To address illegal charcoal comprehensively, we recommend the following priority actions:

6.1. Legislative and Regulatory Reforms

Amend the Forest Act (19:05) and Communal Lands Act (19:04) to explicitly define and regulate charcoal production and trade. Introduce clear licensing or prohibition clauses and raise penalties (e.g., mandatory jail sentences) to deter offenders. Develop uniform district-level by-laws in Muzarabani, Hurungwe and other hotspots. Ensure the laws differentiate between exotic-plantation charcoal (already exempt) and indigenous-forest charcoal.

6.2. Enhanced Enforcement Mechanisms

Build a robust multi-agency enforcement unit. This should include Forestry Commission officers, EMA, police and local council rangers, with a permanent team deployed in charcoal hotspot areas. Scale up support for community ranger programs (e.g., train more *Akashinga*-style patrol teams) and border guards. Equip teams with resources (vehicles, drones, communication) for round-the-clock monitoring of known routes. Crack down on corruption and impunity—require confiscation of illegal loads (not just fines) and publicize prosecutions.

6.3. Sustainable Livelihood Development

Invest in rural enterprise development—support beekeeping, wild fruit and medicinal plant harvesting, and sustainable woodcraft as income sources that do not degrade forests. Provide microfinance and training for agroforestry, irrigation, and improved crop yields to reduce farming pressure on woodlands. Expand energy programs—distribute fuel-efficient (improved) cookstoves, subsidize solar home kits, and facilitate community biogas/LPG use. These measures reduce household charcoal use and give forest communities new revenue streams.

6.4. Regional Cooperation

Work with SADC neighbors under cross border agreements such as the Maputo Declaration on Miombo Woodlands to harmonize woodfuel policies. Negotiate bilateral agreements (e.g., with Mozambique) to enforce transit controls on charcoal and share intelligence. Collaborate with energy authorities to integrate woodfuel strategies into the national energy plan (e.g., include cookstove promotion in energy policy). Foster partnerships with conservation NGOs and private sector to co-fund livelihood pilots and monitoring systems.

6.5. Monitoring and Evaluation

Establish a forest monitoring system (using satellite data and ground surveys) to track forest cover changes and identify new illegal kiln sites. Set targets for deforestation reduction and periodically report progress. Launch a communications campaign to raise awareness of charcoal’s environmental impact and the benefits of alternatives. Engage local media, schools and traditional leaders in messaging. Finally, evaluate pilot interventions (ranger programs, NTFP projects, cookstoves) and scale up those that succeed.

Table 4 summarizes the key recommendations with implementation timelines and responsible agencies.

Table 4: Summary of key recommendations with implementation framework

Category	Specific Action			Timeline	Lead Agency	
Legislative Reform	Amend	Forest Act	(19:05)	6-12 months	Ministry of Environment and Wildlife	

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Category	Specific Action	Timeline	Lead Agency
Enhanced Enforcement	Define charcoal regulations	6-12 months	Forestry Commission
	Increase penalties	6-12 months	Parliament
	Multi-agency enforcement unit	3-6 months	Forestry Commission
	Community ranger programs	6-12 months	Forestry Commission/Local councils/Communities
	Equipment and resources	Ongoing	Government/Development Partners
	Border control enhancement	6-12 months	ZIMRA/Police/Forestry Commission
Livelihood Development	NTFP enterprise support	12-24 months	Development Partners/NGOs
	Microfinance programs	6-12 months	Financial institutions/Private Sector
	Improved cookstoves	Ongoing	Private Sector/Ministry of Energy and Power Development
	Solar kit subsidies	12-24 months	/Ministry of Finance, Economic Development and Investment Promotion
	Agroforestry training	12-24 months	ARDAS (former AGRITEX)/FAO
Regional Cooperation	SADC harmonization	12-18 months	SADC Secretariat

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Table 4 continued from previous page

Category	Specific Action	Timeline	Lead Agency
Monitoring & Evaluation	Bilateral agreements	6-12 months	Ministry of Foreign Affairs and International Trade
	Intelligence sharing	3-6 months	Police (ZRP)
	Satellite monitoring system	6-12 months	Forestry Commission
	Awareness campaigns	Ongoing	Forestry Commission/NGOs
	Impact evaluation	Annually	Ministry of Environment Climate and Wildlife/Office of the President and Cabinet (OPC)

7. Conclusions

Illegal charcoal production poses an urgent threat to Zimbabwe’s ecological and economic future. If allowed to continue unchecked, it will permanently impair watershed functions, soil health and climate resilience—undermining the very development it superficially supports. We reiterate that decisive policy and livelihood interventions are needed now. This means locking in a new course—toughen and enforce forest laws, stop unsustainable logging of native woodlands, and invest in people and energy solutions that make forest conservation compatible with community welfare.

The GEF 6 project offers a timely platform to pilot these reforms. By demonstrating how improved governance, community engagement, and alternative livelihoods can work together, Zimbabwe can secure its miombo forests for future generations. The success of this approach will depend on strong political will and collaboration among government, civil society, donors and local communities. Only with such a unified effort can Zimbabwe turn the tide on illegal charcoal, protect its woodlands, and chart a sustainable path to energy security.

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