

POLICY BRIEF

Managing the *Prosopis juliflora* (Mathenge) Menace in Kenya's Frontier Counties: A Regional Strategy for Ecological Restoration, Climate Resilience and Green Economic Growth

Date: November 2026

Executive Summary

Prosopis juliflora, commonly known as *Mathenge*, has become one of the most significant environmental and socio-economic challenges facing Kenya's Arid and Semi-Arid Lands (ASALs). Originally introduced into Kenya during the 1970s and 1980s to combat desertification, provide fuelwood, stabilize soils and supply livestock fodder, the species has spread aggressively beyond its intended areas. Today, it has invaded rangelands, riverine ecosystems, wetlands, irrigation schemes, conservation areas and human settlements across many counties, threatening biodiversity, pastoral livelihoods, water resources and infrastructure. While the species provides important economic benefits through charcoal production, livestock fodder, poles, honey production and fuelwood, these benefits have increasingly been outweighed by the ecological, economic and social costs associated with its uncontrolled spread.

Recognising the growing threat posed by *Prosopis juliflora*, the Frontier Counties Development Council (FCDC) commissioned a comprehensive study covering its ten member counties to determine the extent of invasion, assess its environmental and socio-economic impacts, review existing management practices and recommend practical, evidence-based solutions. The study concludes that complete eradication of *Prosopis* is neither technically feasible nor economically practical. Instead, it recommends an integrated management approach that combines mechanical and manual clearing, ecological restoration, commercial utilization, strong community participation, policy harmonisation and sustained institutional coordination. Such an approach would not only control further spread but also transform the invasive species into an economic resource capable of supporting green enterprises and rural livelihoods.

Background

Prosopis juliflora belongs to the Leguminosae family and was introduced into Kenya because of its remarkable ability to survive under harsh climatic conditions. It was promoted by government agencies, development partners and non-governmental organizations as a fast-growing tree capable of providing fuelwood, livestock fodder, soil fertility improvement and

protection against desertification. However, over the years, the species has adapted exceptionally well to Kenya's ASAL conditions and has become highly invasive. Frequent droughts, communal grazing systems, unrestricted livestock movement and the absence of coordinated management strategies have accelerated its spread across large parts of northern Kenya. The species produces abundant seeds, regenerates rapidly after cutting and disperses easily through livestock and watercourses, making it one of the most difficult invasive species to control.

Although the Government of Kenya has promoted utilization of *Prosopis* through charcoal production and other commercial products, these interventions have not significantly slowed its expansion. The study observes that while utilization contributes to reducing biomass, it has not been implemented at a scale sufficient to contain the invasion. Consequently, *Prosopis* continues to spread into productive rangelands, agricultural lands and fragile ecosystems, creating an urgent need for a more coordinated and integrated management strategy.

The Scale of the Challenge

The study confirms that *Prosopis* invasion has reached alarming levels across several Frontier Counties. GIS mapping undertaken during the study indicates that Isiolo and Turkana Counties have the highest percentage cover at approximately 5.1 percent, followed by Tana River, Garissa, Mandera, Lamu, Marsabit, West Pokot, Wajir and Samburu. The invasion is expanding rapidly into riverine ecosystems, wetlands, grazing lands, irrigation schemes and conservation areas, where it suppresses indigenous vegetation, reduces pasture availability, obstructs water flow and degrades ecosystem functions. The study notes that previous national mapping did not include Mandera and Wajir, demonstrating the importance of continuous monitoring across all frontier counties.

The invasion has profound implications for pastoral production systems. Dense thickets reduce grazing land, block livestock movement corridors, interfere with irrigation infrastructure and restrict access to rivers and water points. The sharp thorns cause injuries to both humans and livestock, while excessive consumption of *Prosopis* pods has been associated with dental and digestive disorders in animals. Biodiversity continues to decline as indigenous trees and grasses are displaced, threatening wildlife habitats and weakening ecosystem resilience. These cumulative impacts undermine pastoral livelihoods and increase vulnerability to drought and climate change.

Opportunities for Sustainable Management

Despite its destructive impacts, the study recognises that *Prosopis* possesses considerable economic value if managed sustainably. Cleared biomass can be converted into charcoal, briquettes, construction poles, posts, furniture, livestock feed, honey products and biochar. Experiences from Baringo, Garissa, Tana River and Turkana demonstrate that commercial utilization can generate substantial household incomes while simultaneously reducing the density of invasive stands. The study cites evidence that charcoal enterprises, pole production and fodder processing have become important income-generating activities for many households, while briquetting technologies provide cleaner and more efficient energy

alternatives. These value chains offer significant opportunities for employment creation, particularly among women and youth, while contributing to local economic development.

The study also highlights the potential for processing *Prosopis* pods into livestock feed, thereby converting one of the principal mechanisms responsible for seed dispersal into a productive enterprise. By collecting pods before they are consumed by livestock, communities can simultaneously reduce further spread of the species and generate additional income through feed production. Such innovations illustrate that *Prosopis* management should combine ecological restoration with economic incentives to ensure long-term sustainability.

Strategic Policy Response

The study recommends replacing fragmented and reactive interventions with a coordinated regional management programme led by the Frontier Counties Development Council in collaboration with county governments, national institutions, research organisations, development partners and local communities. This programme should harmonise county policies, strengthen institutional coordination, mobilise sustainable financing and establish common standards for monitoring, restoration and commercial utilization across all frontier counties.

Ecological restoration should become the central pillar of *Prosopis* management. The study recommends that degraded rangelands, wetlands, riverine ecosystems, irrigation schemes and conservation areas should undergo systematic manual and mechanical clearing followed immediately by reseedling with indigenous grasses, enrichment planting of native tree species and long-term maintenance to prevent reinvasion. International experience from South Africa and Australia, together with successful demonstrations in Kenya, confirms that integrated restoration approaches are capable of reversing *Prosopis* invasion where adequate follow-up is maintained.

Commercial utilization should complement restoration efforts by ensuring that biomass removed during clearing becomes an economic asset rather than waste. Counties should promote investment in charcoal processing, briquette manufacturing, livestock feed production, pole processing, honey enterprises, bioenergy and carbon-based businesses. Strengthening Public-Private Partnerships and revitalising Charcoal Producer Associations would expand markets, improve product quality and create incentives for continuous harvesting of invasive stands. Such investments would simultaneously restore ecosystems, create employment and stimulate rural economic growth.

Community participation must remain at the centre of *Prosopis* management. The study recommends empowering local communities through awareness campaigns, technical training, demonstration sites, exchange visits and entrepreneurship development. Youth employment programmes focused on manual clearing, grass reseedling, nursery establishment and biomass processing would provide much-needed green jobs while accelerating landscape restoration. Building the capacity of Charcoal Producer Associations, community groups and conservancies would further strengthen local ownership and ensure sustainable management beyond externally funded projects.

Policy Recommendations

1. The Government of Kenya and county governments should adopt a coordinated regional policy framework for *Prosopis* management that recognises the species as both an invasive ecological threat and a potential economic resource. Counties should harmonise legislation, establish dedicated *Prosopis* management programmes and integrate restoration activities within County Integrated Development Plans, County Climate Change Funds and annual budgets. Long-term financing should be mobilised through county allocations, national government support, climate finance, development partners and private sector investments.
2. County governments should prioritise restoration of degraded landscapes through integrated manual and mechanical clearing, followed by grass reseedling, indigenous tree planting and continuous maintenance. Restoration programmes should be implemented using labour-intensive approaches wherever appropriate in order to maximise employment opportunities while improving ecosystem health.
3. Governments should also promote commercial utilization of *Prosopis* biomass through investments in charcoal, briquettes, poles, livestock feed, honey production and bioenergy industries. Establishing processing facilities within affected counties would increase local value addition, stimulate entrepreneurship and create sustainable livelihoods while reducing invasive biomass. Public-Private Partnerships should be encouraged to support investment in processing industries, market development and technology transfer.
4. Institutional coordination should be strengthened by clearly defining the complementary roles of county governments, Kenya Forest Service, Kenya Forestry Research Institute, National Environment Management Authority, community organisations and the private sector. Continuous GIS mapping, research, monitoring and community awareness programmes should be institutionalised to ensure early detection of new invasions, effective management of cleared areas and evidence-based decision-making.