

Sectoral public policies & pressures on biodiversity

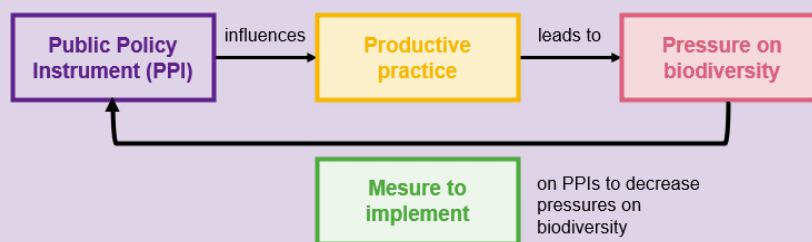
Sector(s): agriculture (small-scale, horticulture), pastoralism, forestry

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It highlights the linkages between the pressures on biodiversity that are caused by the sectoral production practices and the main sectoral, economic and trade public policy instruments (PPIs) shaping these practices. These instruments can be of several kinds: regulatory, economic and financial, informational, etc. They have been categorized according to the extent to which they take biodiversity into account: ● blind to biodiversity; ● taking biodiversity into account. Several priority measures to be implemented have been identified and are presented below: **reform** (repurpose, strengthening or abolition) of an existing instrument; **enforcement of an** existing instrument; **introduction** of a new instrument.



The main harmful productive practices, the PPIs shaping these practices and associated gaps, as well as the priority measures that could be implemented were identified through a literature review and interviews with experts. We used the DPSIR framework (Driver – here the harmful practices; Pressure; State; Impact; Response – here, priority measures that could be implemented). Detailed data on the consequences for biodiversity (State) and for Humans (Impact) are available in the [diagnoses](#) carried out in phase 1 of the BIODEV2030 project. The classification of pressures on biodiversity is based on the IPBES categorization.

Country context: National biodiversity targets & progress of biodiversity mainstreaming in public policies

Kenya has a highly diverse climate and ecosystems, including savannahs, historically protected for the large mammals they shelter. State-protected areas cover 12% of the countryⁱ and include only 30% of its biodiversityⁱⁱ. Kenya's rich wildlife has made it a major tourist destination. Driven by rapid land use change and rapid growth in human populations, there is an increasing human-wildlife interface which is leading to escalating human-wildlife conflicts. Other major threats to biodiversity include the illegal and unsustainable use of natural resources, invasive alien species and climate change. **Kenya's new constitution, passed in 2010, recognises the right to environmental protection and refers to biodiversity as “national heritage”**. It also enshrines the **country's devolution**, strengthening the prerogatives of the counties, particularly in the development of their agricultural, livestock and urbanisation policies. The government is currently implementing the Green Economy Strategy and Implementation Plan (GESIP) 2016-2030, emphasizing low carbon emissions, resource efficiency, and social equity. In this framework, Kenya recently published its first Green Growth Index, based on efficient and sustainable resource use, natural capital protection, green economic opportunities, and social inclusionⁱⁱⁱ. The National Biodiversity Strategy and Action Plan (NBSAP) was revised in 2019, making the mainstreaming of biodiversity in sectoral policies its primary objective. Work is underway to update it before COP16¹. The President also launched the National Tree Growing Restoration Campaign in 2022, targeting the planting of 15 billion trees by 2032^{iv}. On the economic front, Kenya's *Vision 2030* sets out the priority sectors for development: tourism, agriculture, trade, industry, services and the blue economy. In the fourth Medium Term Plan (2023-2027), management of the environment and natural resources is one of the five priority sectors. Finally, the development of an integrated natural resources management policy is underway and will be anchored within the executive office of the President^v. This document focuses on agriculture, pastoralism and forestry, as key sectors impacting biodiversity^{vi}.



Agriculture (small-scale and horticulture)

Sector context: Small-scale agriculture

With 7.5 million small-scale producers, food crops account for 80% of Kenya's agricultural production^{vii}. Agriculture is practised on a small scale (less than 2 ha) in mixed farming, and targets a wide range of crops (maize, sorghum, millet, beans, cowpeas, green beans, tomatoes, onions). It therefore plays a key role in food security and employment for rural populations. It is essentially rain-fed, making producers increasingly vulnerable to climate change. The fourth Medium Term Plan (2023-2027) positions increased smallholder productivity as one of the country's growth drivers.

Sector context: Horticulture

The agricultural sector accounts for 20% of Kenya's GDP and 65% of export earnings^{viii}, thanks in part to horticulture, which includes the cultivation of flowers, fruit, and vegetables. Large farms occupy 39% of land area. The cut flower sector is the largest in terms of revenue, thanks to exports to the European market, but the industry is facing ever-tighter sanitary and phytosanitary requirements. Fruit and vegetables are mainly consumed on the domestic market or exported to the regional market (Tanzania, DRC, Uganda)^{ix}. Overall, the sector also faces rising input prices and recurrent droughts, forcing the development of irrigation. The government's priorities for the sector are therefore lower input costs, mechanization, irrigation and the development of the agro-industry and the value chain^x, to increase food production and reduce the cost of food.

⚠ Pressure: Land-use change

Harmful practice **Conversion of natural areas into farmland**

PPIs linked to this practice & associated challenges

Degree of
biodiversity
mainstreaming

¹ A study on the review of biodiversity-related policies and institutions and their alignment and consistency with the Kunming-Montreal framework, commissioned by the Department for the Environment and Climate Change, has been entrusted to AFREDEC Consultants. The inception report was validated in May 2024.

► **Counties spatial plans and land use change policies – Limited enforcement.** Following the devolution principle, the 2012 *County Governments Act* stipulates that counties are responsible for establishing their spatial plan, under the *Kenya National Spatial Plan 2015-2045*. **Yet only few counties have developed and operationalized their County Physical and Land Use Development Plans, and most counties do not have policies for guiding land use change.** Furthermore, the decentralization of the planning function has made it easier to convert land use^{xi}, as land allocation often goes without defining a precise usage. Many fertile lands have been subdivided and turned into unsustainable parcels or converted into urban areas, diminishing land productivity and increasing the need for new land^{xii}. The plan elaboration process should be participatory to integrate all types of land users. Degraded land should be turned into agricultural land, whereas key biodiversity areas² should be outlined as ecological integrity zones, gazetted and protected from encroachment by buffer zones. This effective land use planning would be critical in reducing human-wildlife conflicts. Illegal excisions of gazetted forests should also be stopped, by a strict enforcement of the land law.



However, some counties have integrated some agroecology principles into their County Integrated Development Plans (CIDP), such as Murang'a, Vihiga, Elgeyo Marakwet and Busia^{xiii}. In particular, Murang'a developed an *Agroecology Development Policy and Act* in 2022 to provide a framework for the implementation of agroecological plans in the county. Lessons learned from these experiments could help inform national planning policies.

► **Shamba system – Limited enforcement.** Shamba is an agroforestry practice from the colonial era, which allows farmers to cultivate crops on clear-cut forest land with the obligation to replant trees and move on once the trees mature. It aims at supporting both reforestation and local livelihoods. It was officially incorporated into Kenyan law in the 2016 *Forest Conservation and Management Act* and rebranded as the *Plantation Establishment and Livelihood Improvement Scheme (PELIS)*. However, the system has become highly controversial and accused of facilitating illegal agricultural expansion, due to poor governance and corruption of foresters. Its potential phase-out is contentious, as it involves evicting communities from forests. It has now been banned in some forests where farming groups have refused to comply with the rules of the system and restricted to seasonal vegetable growing in others. Farmers are also given too small acres of land, leading to inefficient agricultural units.



► **Promotion of farm forestry – Limited enforcement.** The 2009 *Agriculture (Farm Forestry) Rules* states a requirement to ensure a minimum of 10% of tree cover on any agricultural land holding. **However, inspectors may only issue compliant certificates and report any non-compliance to the District Agricultural Committee. The rule makes no provisions for sanctions^{xiv}.** The 2021 *Agricultural Policy* places a strong emphasis on this target as well^{xv}. A draft agroforestry strategy was elaborated in 2021, but it has not been enacted yet. Implementing agroforestry policies and strategies will require coordination between the Ministry of Environment, Climate Change and Forestry and the Ministry of Agriculture and Livestock Development^{xvi}. A portion of the *National Tree Growing Restoration Campaign* could also focus on promoting farm forestry, which would additionally allow farmers to take care of the planted seedlings.



⚠ Pressure: Pollution

Harmful practice Inappropriate use of agrochemical inputs

PPIs linked to this practice & associated challenges

► **Banned pesticides and usage regulations**

– **Limited enforcement.** The authorized products, usage practices and Maximum Residue Levels (MRL) are decided by the Ministry of Agriculture's Pest Control Products Board (PCPB), established under the 2012 *Pest Control Products Act^{xvii}*. Only gazetted government inspectors can establish infringements to the law (section 8). **Their number and limited resources do not allow for an effective monitoring of pesticides use**, although there are recurring issues of banned pesticides smuggling and misuse (such as not respecting the time between application and sale of products).

Degree of
biodiversity
mainstreaming



² Under the Integrated National Landuse Guidelines 2011 and National Land Use Policy 2017, key biodiversity areas and corridors should be identified and gazetted.

– **Misalignment between domestic market and export standards.** 76% of pesticides volumes used in Kenya are classified as highly hazardous by the EU, and 44% are banned in the EU^{xxiii}. **Only 4% of the country’s production complies with export standards^{xxix}.** Moreover, usage regulations are aligned on international standards, which are considering mitigation measures which cannot always be implemented in the Kenyan context (e.g. for use in a greenhouse). Specific research should be required by law before registering an active ingredient and setting maximum residue levels^{xx}. Most hazardous pesticides should be gradually phased out.

▶ **Pesticides distribution – Blind to biodiversity.** The government distributed nearly 230,000 liters of pesticides, plus other chemicals, between 2021 and 2023^{xxi}. Part of this expense could be repurposed for supporting biopesticides use and other integrated pest management measures, including bio herbicides specifically used to control invasive alien species. ●

▶ **National Fertilizer Subsidy Program – Blind to biodiversity.** Fertilizer cost-reduction projects are supported by the 2013 *Crops Act*. The national subsidy program was first launched in 2007 to tackle low yields and reintroduced in 2022 to shield small-scale farmers from rising prices due to the energy crisis. **Overuse of subsidized fertilizers led to the acidification of 19 million acres^{xxii}.** In addition, this subsidy, representing KES 5 billion a year, **mainly goes to increase maize production^{xxiii} and to larger landholdings.** For the next campaign, fertilizer will be blended with lime to reduce soil acidity^{xxiv}. The *Agricultural Sector Transformation and Growth Strategy (ASTGS)* aims at transforming this subsidy into a voucher system, allowing to buy a range of inputs (seeds, animal feed, health products), with mandatory extension services (emphasis should be laid on soil analysis). This voucher system is still at pilot stage. In line with the 2023 *Agricultural Soil Management Policy*, emphasis should be placed on integrating services alongside fertilizer distribution, such as soil testing, selecting the appropriate fertilizer types, and promoting best use practices and alternatives for fertility improvement, with a special focus on small-scale farmers. ●

▶ **Incentives for agroecology – To strengthen.** Kenya has been in the process of developing a national policy on organic agriculture since 2009^{xxv}. The country is in the process of validating its *National Agroecology for Food System Transformation Strategy (2024–2033)*, which will outline a framework for incentivizing the adoption of agroecology practices across various sectors. ●●

▶ **Standards for composition, packaging and labelling of organic inputs and products – Lack or regulatory framework and enforcement.** The 2021 *Fertilizers and Animal Foodstuffs Regulation* does not apply to organic fertilizers^{xxvi}. Distribution of bio pesticides is also hampered by costly and lengthy registration processes^{xxvii}. As the government begins investing in the development of certain bio inputs, such as pyrethrum^{xxviii}, streamlining the regulatory framework for bio inputs is essential to ensure the successful uptake and commercialization of these products. Prioritizing the regulation of organic product labeling is also crucial to ensure a price premium. ●

▶ **Crop insurance – Blind to biodiversity.** The government provided crop insurance to over 1 million farmers between 2021 and 2023^{xxix}. **This insurance scheme does not distinguish between farmers in terms of their practices, meaning that sustainable or regenerative agriculture practitioners receive the same coverage as those using conventional methods.** Farmers implementing sustainable agricultural practices could be priority beneficiaries of such measures or benefit from a reduced rate. Such insurances could also implement a “build back better” principle, using the recovery phase to implement climate-smart practices which will improve shock resilience. To this end, they could be complemented with financing schemes such as low-interest loans and grants for investments. ●




Other harmful practices Land-degrading agricultural practices (monoculture, lack of crop rotation, etc.); inefficient irrigation practices.

ECONOMIC POLICY

Degree of biodiversity mainstreaming

Agriculture is a key contributor to Kenya’s growth. The *Bottom-Up Economic Transformation Agenda (BETA)* states agriculture transformation as the first core priority area. To reduce food imports, rice, tea and edible oils have been selected as key value chains in the budget. Overall, agricultural policy will be geared towards addressing the cost, quality and availability of inputs; reducing the cost of food; reducing the number of food insecure Kenyans; raising productivity; creating jobs, increasing income of farmers and foreign exchange earnings;

boosting export crops^{xxx}. Monetary interventions are currently focused on harnessing inflation, especially food prices.

- ▶ **2006 Abuja Declaration – Limited enforcement.** The declaration sets targets for increasing fertilizer use in African countries, initially covering both inorganic and organic fertilizers. However, in practice, most countries have prioritized the promotion and adoption of inorganic fertilizers, sidelining organic alternatives. Targets and resources allocated to organic fertilizers production, distribution, procurement and use should be defined more clearly. 
- ▶ **Polluter pays principle – Limited enforcement.** It is entrenched in the 1999 *Environmental Management and Co-ordination Act* (EMCA), but the concept has not been effectively enforced^{xxxi}. The EMCA Act is currently under review to better implement the principle^{xxxii}. The current framework to apply it to pollution stemming from agricultural practices is still weak. 
- ▶ **Draft Green Fiscal Incentives Policy Framework (2022) – To be enacted.** This policy proposes to enhance green technology in agricultural production, including organic farming and cooperative development. It is still pending approval. 

TRADE POLICY

Degree of biodiversity mainstreaming

Kenya aims at becoming a competitive export-led economy. Agriculture’s main export markets are the EU, for high-value fresh products (cut flowers, beans, leafy greens, etc.), COMESA (Common Market for Eastern and Southern Africa) and EAC (East African Community) countries, thanks to regional free trade agreements.

- ▶ **“Double standards” in agrochemicals-exporting countries – Blind to biodiversity.** Many countries with significant agrochemical sectors permit the export of pesticides that are banned domestically. Consequently, these companies continue to export highly hazardous pesticides to low- and middle-income nations with less stringent regulations, which poses serious risks to biodiversity and human health. It is crucial to gradually align these standards to mitigate such impacts. 
- ▶ **Standards in EU-Kenya trade agreement – To comply with.** The trade agreement took effect in July 2024, granting Kenya duty-free access for its exports to the EU while both parties committed to environmental protection and addressing climate change. Despite this duty-free access, imported fresh products must still adhere to stringent standards regarding authorized phytosanitary products and production methods. The policy framework will have to be aligned with these new commitments. 
- ▶ **COMESA’s Sanitary and Phytosanitary (SPS) regulations – To comply with.** COMESA has just finalized the revision of its SPS regulation, strategy and implementation plans, aiming to eliminate barriers to regional trade in agricultural products and improving food safety. The regional policy should be at the forefront of the phasing out of highly hazardous pesticides and labelling for sustainable products. 

Suggested priority measures to implement to align public policies (sectoral, economic and commercial) and biodiversity conservation

The suggested measures presented below were drawn up based on a literature review and interviews with experts. They summarize the suggested measures presented in the previous paragraphs on PPIs, in response to their current content and the gaps identified in terms of biodiversity mainstreaming

Pressure on biodiversity	Suggested priority measures	Type of policy	Type of PPI	Type of measure
Cross-cutting	Elaborate a consolidated Agricultural Reform Bill to integrate the various policies on sustainable agriculture into a cohesive legislative framework (<i>Kenya Climate Smart Agriculture Strategy, Agricultural Soil Management Policy, Agroecology for Food System Transformation Strategy</i> , etc.), while also establishing guidelines for their implementation at the county level.	Sectoral	Cross-cutting	Introduce

Land-use change	Enact the National Land Use Master Plan and the Agriculture Land Use Master Plan, ensuring efficient land use planning and sustainable land management to avoid land fragmentation as well as encroachment into key biodiversity areas.	Economic-Sectoral	Regulatory	Introduce
	Support the development and operationalization of County Physical and Land Use Development Plans, in accordance with the National and Agriculture Land Use Master Plan and drawing on lessons learned in advanced counties, including conflict resolution.	Economic-Sectoral	Regulatory	Enforce
	Issue warnings in forests managed under the shamba system where farming groups fail to adhere to rules; implement restrictions on permitted farming activities or revoke the system entirely if non-compliance continues.	Sectoral	Regulatory	Enforce
	Ensure that land is adequately allocated within the shamba system to promote economically viable and sustainable land use while adhering to rotations after the trees reach maturity.	Sectoral	Regulatory	Strengthen
	Allocate part of the resources for the National Tree Growing Restoration Campaign to implement policy targets on farm forestry.	Sectoral	Economic	Strengthen
Pollution	Strengthen the capacity for law enforcement to monitor pesticide use effectively by increasing the number and training of inspectors.	Sectoral	Regulatory	Enforce
	Develop plans to gradually phase out Highly Hazardous Pesticides (HHPs), prioritizing those banned in the EU.	Sectoral	Cross-cutting	Introduce
	Review the pesticides regulation to align with the new EU-Kenya agreement and with COMESA's SPS regulations.	Trade	Regulatory	Strengthen-Enforce
	Increase resources dedicated to integrating services alongside fertilizer distribution to ensure the uptake by small-scale producers, the proper use of fertilizers and promote alternative soil fertility practices.	Sectoral	Economic	Strengthen
	Support the implementation of the <i>National Agroecology for Food System Transformation Strategy</i> through the development of a set of economic incentives for agroecology (certification, taxation, payments for ecosystem services, etc.), most of which could be embedded in the <i>Green Fiscal Incentives Policy Framework</i> .	Sectoral-Economic	Economic	Enforce
	Streamline the regulatory framework for bio inputs to support their uptake and commercialization.	Sectoral	Regulatory	Repurpose
	Support the labeling of sustainable products by establishing clear requirements and building strong monitoring and enforcement capacity.	Sectoral	Informational	Strengthen
	Implement risk-sharing insurance and financing schemes that support the transition to more sustainable agricultural practices	Sectoral	Economic	Repurpose
Elaborate guidelines for the implementation of the polluter pays principle in the agricultural sector.	Sectoral-Economic	Economic	Introduce	



Pastoralism

Sector context

Around 80% of Kenya is arid and semi-arid land (ASAL), where pastoralism is the main source of income^{xxxiii} and employs over 4 million people^{xxxiv}. Pastoralism, an extensive, itinerant system in which livestock (cattle, camels, goats, sheep) are mobile and feed on natural pastures, accounts for over 70% of Kenya's total livestock population^{xxxv3, xxxvi} and 13% of the country's GDP^{xxxvii}. Pastoral livestock farming is family-based, geared towards the production of meat and live animals, and, secondarily, dairy production, which is gaining in importance because of the growing demand for animal products driven by urbanisation and rising living standards. Pastoralism plays a central role in the cultural identity of several ethnic groups, serving as a marker of social status and an exchange currency. It also contributes to ecosystem management, by regulating plant species, distributing seeds, fertilising the soil with animals' excrements, etc. Moreover, livestock and wildlife share the same key corridors for seasonal movement. **However, the expansion of agriculture, urbanisation and the development of ranching (fenced areas) are increasingly limiting the extent of pastoral land, leading to overgrazing, desertification and conflicts over access to water resources and grazing lands.** While the cattle population declined by 25% between 1977 and 2016, the numbers of sheep and goats have surged by 75%^{xxxviii}. This shift indicates a deterioration in pasture quality, further increased by goats which tend to consume the roots of plants, exacerbating land degradation. Increasing droughts linked to climate change are also a key threat to pastoralism. Moreover, although numerous laws and policies⁴ have been developed to address pastoralism needs and rangelands management, their implementation has remained poor and public incentives have tended to focus on commercial livestock production and ranching^{5, xxxix}, as the government is planning to double milk production in the next five years.

⚠ Pressure: Natural resources overexploitation

Harmful practice Overgrazing (due to the increasing sedentarization of livestock and overstocking)

PPIs linked to this practice & associated challenges

▶ **Land tenure system and spatial planning – Inadequate.** Pastoralists practice a communal land ownership system rooted in traditional customary rights. But communities are facing alienation of their lands because of increasing privatization, fencing⁶ due to sedentarization of pastoral households and the growing number of livestock enclosures, and encroachment into pastoral rangelands from other land uses (agriculture). It is in contradiction with the 2016 *Community Land Act*, which mandates that the County governments hold in trust all unregistered land on behalf of the communities. **However, the implementation of the Act is very slow^{xl}, increasing pastoralists land insecurity. Moreover, the spatial planning (national and county level) does not make enough provisions for communal land use and contributes to land subdivision in smaller units unsuitable for pastoralism, and to the attribution of dry season grazing areas to agriculture.** The movement of herds is therefore reduced, contributing to overgrazing of remaining areas. Bottom-up processes need to be incorporated into regional land-use planning, to ensure equitable allocation of land and corridors for livestock. Developing an Integrated Land Use Master Plan for the ASALs would be highly beneficial, especially considering the significant cross-county livestock movements involved. Finally, economic incentives should be designed for local landowners to maintain open rangelands.

▶ **Grazing management plans – Limited enforcement.** The 2017 *National Land Use Policy* promotes development of communal grazing management plans instead of open access to grazing

Degree of biodiversity mainstreaming



³ The other livestock farming systems in Kenya are agropastoralism (rotating livestock and crops) and ranching (fenced grazing areas with fodder, which is in the minority and mainly located in peri-urban areas with limited land availability and a high demand for milk).

⁴ Kenya Constitution 2010, Draft National Livestock Policy 2019, Draft Rangelands Management and Pastoralism Strategy 2018 – 2028, National Policy for the Sustainable Development of Arid and Semi-arid Lands of Kenya, ASAL Policy Draft 2012, Community Land Act, County Government Act

⁵ In its Budget Policy 2024, the government plans to invest in the modernization of milk collection and transformation infrastructures.

⁶ The shrinkage of land for pastoralism, coupled with the expansion of conservancies, has perversely incentivized fencing to secure ownership and resources, including forage for livestock (Tyrrell et al., 2022)

land^{xii}. The draft 2023 *Forest Policy*^{xiii} also promotes rotational grazing but it has not been enacted yet. The 2012 *Crop Production and Livestock Act* empowers local authorities to make bylaws (quotas, fees, restricted zones)^{xiii}. **So far, Tana River is one of the few counties which has elaborated a *Livestock Grazing Control Act* in 2017^{xiv}, providing a framework at county level for different management instruments (governance, permits, fees, mapping of areas suitable for grazing, etc.). Grazing management plans are then to be participatively elaborated at community level.** The plans are based on traditional systems of pasture management to turn them into effective management structures. They consist of rangeland resource mapping and splitting into delineated grazing blocks, which can include fencing of dry season pastures. Bylaws are required to define the sustainable level of grazing, rights of access, organise cross-county movements, precise the role of each party and the benefit sharing mechanisms. Although many counties have not yet formalized their grazing plans, there are existing grazing plans/bylaws at the local level which could inform the elaboration of guidelines at county level. Such plans could also incorporate provisions on human-wildlife conflicts (livestock attacks).

► **Research on the carrying capacity of rangelands – Inadequate.** The Kenya Agricultural and Livestock Research Organisation (KALRO) was created in 2013 to coordinate agricultural and livestock research activities. **But KALRO’s core focus is on ranching and value addition (improved breed, dairy, fodder production) rather than on rangeland management.** KALRO could work together with other national research organizations to address rangelands research needs. Key research areas include the uptake of technologies on water harvesting and feed development^{xlv}.

► **Extension services – Inadequate.** Because of the vastness of ASALs coupled with extension officers’ shortage who are inadequately facilitated, pastoralists are unable to access better husbandry practices, including the development of complementary livelihoods^{xvi}. Under the County Government Act 2012, livestock extension services are overseen by the county government. **Better coordination of all stakeholders providing extension services** (county officers, NGOs, Farmer Based Organisations (FBOs), communities, private sector and other development partners) could help to scale up capacity building.

► **Index-based livestock insurance (IBLI) – To scale up.** Pilot trials have been successfully led in Kenya to protect the livestock assets of pastoralists during severe droughts and disease outbreaks (Kenya Livestock Insurance Program (KLIP))^{xvii}. Such insurances, also referred to as a parametric insurance, trigger a pre-agreed payout when a specified event or threshold occurs (on rainfall, temperature, etc.), rather than compensating for an actual loss. **The development of diverse insurance products needs to be supported by an adequate policy environment.** Such risk-sharing insurance schemes could support the transition to better husbandry practices.

Harmful practice Conversion of forests into grazing lands

PPIs linked to this practice & associated challenges

► **Authorization to graze and harvest grass in forests – Limited safeguards.** Under Section 49 of the 2016 *Forest Conservation and Management Act*^{xviii}, forest-adjacent communities are granted permission to graze and harvest grass in forests, in respect of their traditional user rights and their participation to forest management. **However, due to limited control and consideration of the carrying capacity, forests are overgrazed.** The law could be reinforced with provisions governing users’ rights and establishing safeguards. Forestry, livestock administrations, communities and research institutions such as KALRO and Kenya Forestry Research Institute (KEFRI) could collaborate to tap forests’ potential for fodder production.

► **Prohibition of grazing in protected areas – Limited enforcement.** Under Section 102 of the 2013 *Wildlife Conservation and Management Act*, “no person shall enter into a national park with any livestock for any purpose without authorization”. **But the Kenya Forest Service (KFS), which is responsible for forest surveillance, has been facing a shortage of rangers for several years, along with corruption issues.** Several hundreds of foresters have recently been enlisted to support the service^{xix}. Sufficient resources should be allocated to ensure they receive proper training.

► **Forest zonation restricting grazing to specific areas – Ensure the enforcement/To enshrine in the regulatory framework.** Following a directive of the government aiming at banning grazing in public forests as part of the measures to protect the seedlings planted in the national tree-planting campaign, KFS issued new guidelines in June 2024 to regulate forest access and ensure sustainable grazing practices. The new system will introduce a wide range of management instruments: quotas

Degree of
biodiversity
mainstreaming

(based on the carrying capacity of the forest), monthly paying grazing permits (to fund forest management), mandatory registration of grazers (to track the number of grazing animals in each area), forest zonation mapping areas allowed for grazing, prohibition of grazing at night, along with strict penalties in case of violation. Prohibited zones will include young plantations, areas for natural regeneration, and ecologically sensitive areas (springs, swamps, etc.). The implementation of these guidelines will involve Community Forest Associations (CFAs) under the guidance of forest station managersⁱ. CFAs are registered associations representing forest-adjacent communities, in line with the Participatory Forest Management (PFM) principle, that is provisioned by the Section 48(2) of the 2016 *Forest Conservation and Management Act*.

Other harmful practices Spread of invasive species linked to cattle mobility (prosopis)

ECONOMIC POLICY

Degree of biodiversity mainstreaming

Leather and dairy are among the nine targeted value chains by the government with the most potential for jobs creation, economic growth and contribution to food securityⁱⁱ. The Budget Policy 2024 provides for numerous supports and investments in infrastructures, geared towards industrialisation of livestock production rather than pastoralism.

- ▶ **Financial incentives to ranching feedlots development – To align with pastoralism needs.** The Kenyan government introduced duty-free imports of raw materials for the manufacturing of animal feeds, aiming at improving local feed availability and reducing production costs for livestock farming. **Support to zero-grazing and semi-permanent livestock system could help decrease pressure on ecosystems.** Diversifying sources for fodder production would also improve pastoralists’ resilience to droughts.



TRADE POLICY

Degree of biodiversity mainstreaming

Exports of live animals and meat are mostly to the Middle East and North Africa. There is also a significant mostly informal cross-border trade with Somalia and Ethiopiaⁱⁱⁱ. However, marketing of livestock and livestock products is hindered by insecurity, seasonality of production and poor infrastructure and distribution systemsⁱⁱⁱ. The enforcement of food safety regulation is a key challenge as well as avoiding the export of raw products such as hides and skins. **But the 2020 National Livestock Policy contains no provisions on trade and marketing of sustainably produced livestock and livestock products**, but leather goods^{iv}. Trade policy could support destocking initiatives, aiming at reducing stocking rates in degraded areas.



Suggested priority measures to implement to align public policies (sectoral, economic and commercial) and biodiversity conservation

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Pressure on biodiversity	Suggested priority measures	Type of policy	Type of PPI	Type of measure
Natural resources overexploitation	Fully implement the 2016 <i>Community Land Act</i> to streamline pastoral land use and secure pastoralists’ land ownership.	Economic	Regulatory	Enforce
	Develop and implement an Integrated Land Use Master Plan for the ASALs, identifying key transhumance corridors.	Economic-Sectoral	Regulatory	Introduce
	Design economic incentives for landowners to maintain open rangelands and remove fences.	Economic-Sectoral	Economic	Introduce

Develop a legal framework at national and county-level to govern the implementation of grazing plans, encompassing bylaws, roles of customary institutions, and promoting participatory planning at the local level in accordance with the <i>Public Participation Act</i> . Measures on human-wildlife conflicts could also be embedded in these plans.	Sectoral	Regulatory	Enforce
Strengthen research on rangeland management, including carrying capacity assessments (based on the mapping of seasonal grazing, water resources and livestock movements) to support the elaboration of grazing plans, as well as research on technologies on water harvesting and feed development.	Sectoral	Other	Repurpose
Develop a framework to better coordinate all stakeholders providing extension services.	Sectoral	Other	Strengthen
Develop a conducive policy environment for the growth of livestock insurance products supporting the transition to sustainable husbandry practices.	Sectoral	Economic	Introduce
Enhance the capacity for effective law enforcement regarding grazing in forests by increasing both the number of foresters and their training.	Sectoral	Regulatory	Enforce
Implement the new grazing management system announced by KFS in forests (quotas, permits, registration, forest zonation, etc.) through the effective participation of Community Forest Associations and benefit-sharing mechanisms to ensure their commitment (revenues from tourism, payments for ecosystem services, etc.).	Sectoral	Regulatory-Economic	Enforce
Develop a national strategy on fodder production, identifying appropriate pasture production areas (including in forests through better collaboration with KFS), increasing production of appropriate pasture species, and enhancing development of strategic feed reserves to guarantee a market for producers and increase resilience to droughts.	Sectoral	Cross-cutting	Introduce
Develop a livestock trade policy which can incentivize pastoralists living in overgrazed areas to destock.	Trade	Economic	Introduce



Forestry

Sector context

Forestry accounts for 3.6% of GDP^{iv}. Kenya's forest cover declined rapidly until 2015^{vi}, mainly because of shifting cultivation (85% of Kenya's forest loss^{vii}), illegal logging (for timber and charcoal) and overgrazing. Forests are key water catchment areas. A semi-autonomous agency responsible for forest administration⁷, Kenya Forest Service (KFS), was created in 2005. Kenya's new constitution, adopted in 2010, sets a target of maintaining 10% of forest cover over its territory, and the government launched a nation-wide tree growing campaign⁸. **The country has imposed several bans on logging of forests over the years to address unsustainable illegal logging and institutionalized corruption and stop forest degradation.** The last ban was introduced in 2018, successfully reversing the trend, reaching a forest cover of 8.83% in 2023^{viii}. In late 2022, the government also launched a national campaign targeting 30% of tree cover in 2032. At the same time, it attempted to lift the ban in 2023, to allegedly curb unemployment and create economic opportunities. Following a court ruling, the ban was finally only partially lifted, to harvest only overmature trees in specific areas. **The ban had sharp impacts on timber supply, in a context of growing demand.** The country faces a shortage of mature forests and available lands for large-scale plantations, thus increasing the pressure on the existing forest cover and on imports. **Beside timber, charcoal production represents a direct source of livelihoods for 700,000 people, mostly informal.** Up to 80% of urban households use charcoal⁹, driving increase in demand^{ix}. Prolonged droughts also pushed farmers away from agriculture into charcoal.

⚠ Pressure: Natural resources overexploitation

Harmful practice Poor forest management practices (clear-felling, limited replanting and maintenance, encroachment into indigenous forests)

PPIs linked to this practice & associated challenges

▶ **KFS' roles – Conflicting roles. KFS lacks clear separation in its forest protection and forest exploitation functions.** As logging represents the most important source of revenue collected by KFS (through the licenses paid by sawmillers), it made law enforcement in forest conservation ineffective^x. It also resulted in an unequal distribution of rangers, most of them being concentrated in commercial forests which generate incomes instead of indigenous forests^{xi}.

▶ **KFS' budget allocation for replanting and tree seedlings maintenance – Inadequate.** After clearing forest compartments, these usually stay for long without replanting, **as foresters lack human and financial resources for a proper replanting campaign.** Therefore, commercial forest plantations managed by KFS have been characterized by low-quality planting materials, delays in replanting, and poor forestry practices leading to a low survival rate of seedlings^{xii}. KFS is understaffed, with a ratio of one ranger for 1,200 ha, where the international recommendation is one for 400 ha. KFS is in the process of enlisting over 3,000 new foresters^{xiii}, who will have to be adequately trained and equipped.

▶ **Shamba system – Limited enforcement.** (see agriculture) **The system was banned, but because of the limited foresters' resources for proper plantation campaigns, it was reinstated^{xiv}.** To prevent misuse of the system and ensure genuine benefits both for local communities and biodiversity, strong regulatory measures are required, with Community Forest Associations (CFAs) playing a critical role in replanting and monitoring encroachment, under the supervision of foresters.

▶ **Ban on logging in public forests – Limited enforcement and pervasive effects.** Due to the rapid decline in forest cover caused by poor sector governance (see above), a logging ban was abruptly imposed in 2018. **This sudden ban drove many actors to operate illegally, especially**

Degree of biodiversity mainstreaming



⁷ KFS is responsible for the management of all public forests, until harvesting of forest stands which is carried out by sawmillers

⁸ This campaign results from many international commitments: the Nationally Determined Contribution (NDC) Adaptation Actions, the achievement of land degradation neutrality by 2030 as a commitment to United Nations Convention to Combat Desertification and the Africa Forest Landscape Initiative (AFR100)

⁹ As primary, secondary or occasional fuel

as the managing authority was under restructuring. KFS has also been granting logging licenses to companies despite the ban^{lxv}. Moreover, it also led to pervasive effects, as it led to a surge in wood imports, some of it coming from illegal logging^{lxvi}, and forestry management operations were stopped (no harvesting, pruning, thinning or replenishing), affecting the quality of logs and replanting. The ban was partially lifted in 2023 to harvest the backlogs, but the lifting was then reversed by the Court, leaving an unclear situation.

► **National Tree Growing Restoration Campaign – Poor planning.** According to the *Forest and Landscape Restoration Plan 2023-2027*^{lxvii}, which aims at expanding both natural and commercial forests, and of other international commitments (see sectoral context), the State is supporting seedlings production with funding and workforce. Replanting operations should focus on cleared forest areas, enabling to have large tenants of commercially viable forests. The state targets 15B planted trees by 2032. The 2024 *Budget Policy* states that over 560 million tree seedlings will be produced, and 150 tree nurseries will be established, to rehabilitate 25,000 ha of degraded forests, establish 4,000 ha of forest plantations and support farm forestry. Despite significant resources and communication dedicated to this initiative, **its effectiveness is hindered by poor coordination between planting campaigns, insufficient attention to the quality of planting materials, and inadequate efforts to improve seedling survival rates.** Greater emphasis should be placed on promoting indigenous tree species, rather than solely focusing on increasing overall tree cover, which can sometimes involve exotic or invasive species that negatively affect local biodiversity.

► **Forest plantations management plans – Limited enforcement.** These 10-year plans of KFS indicate the annual allowable cut and are the foundation of 1-year and 5-year felling plans. They aim to ensure there is a yearly rotation of mature forest stock that can be felled, based on forest's growth rate, species, and ecological sensitivity. **But they are not completely followed, and funds are lacking to update them.** Foresters need to be adequately trained and to have the resources needed to implement and revise the plans. KEFRI, which undertakes research for sustainable management, conservation and development of forest, could support the revision of the plans.

► **Concessions – Limited enforcement.** The 2016 *Forest Conservation and Management Act* allows management of public forests through a concession, licence, contract or joint agreement, after the proposal has been subjected to an environmental impact assessment and on the condition of complying with the management plans prescribed by KFS. **But this option has not been used yet**^{lxviii}. Creating financial incentives to engage the private sector could ultimately help attract private investment for timber production, thereby reducing reliance on natural forests and imports.

► **Support to the fencing of forests – Pervasive effects.** The government has supported forest fencing to protect against grazing, NTFP collection, and encroachment. However, **this measure is costly and often leaves communities feeling deprived of their rights and livelihoods, leading some to resort to illegal entry into forests**, especially since there are not enough rangers to monitor the fences. Implementing Participatory Forest Management plans, as outlined in the 2016 *Forest Management and Conservation Act*, could foster greater community ownership and promote the sustainable use of resources, by empowering communities to serve as the first line of defence against offenders.

Harmful practice Logging of high value indigenous tree species (especially cedar)

PPIs linked to this practice & associated challenges

► **Ban on indigenous trees logging – Limited enforcement.** The government banned logging of indigenous trees in 1986 through various legislations and presidential decrees^{lxix}, as they were logged at a higher rate despite their important ecological value (hosting of pollinators and other wildlife, soil health improvement, water retention, etc.). **Illegal logging still occurred because of limited enforcement by KFS**, which also issued licenses to companies despite the ban (see above)^{lxx}. The lifting of the ban on logging should concern only exotic trees in commercial forests, and safeguards should be implemented to avoid the logging of indigenous trees.

► **Zoning of indigenous and commercial forests – Limited enforcement.** The 2016 *Forest Conservation and Management Act* designates specific areas for logging and conservation. However, **some plantations are located deep inside indigenous forests and multiple encroachments in conservation zones occur due to the lack of clear boundaries between public forests and reserves, and KFS's lack of rangers to patrol the forests adequately.** Close monitoring during logging should be enforced, to prevent encroachment, and commercial forests should act as a buffer

Degree of
biodiversity
mainstreaming

zone around indigenous forest. All plantations within conservation zones should be reverted to indigenous forests.

► **Hammer marks to track forest products origin – Legal loophole.** No hammer mark is required for logs stemming from private farms. **Illegally sourced products can therefore be camouflaged to originate from private farms^{lxxi}.** Stricter penalties should be applied to deter offenders. This system could serve as a foundation for establishing a national standard for sustainably harvested timber.

Harmful practice Charcoal production: targeting of indigenous trees, no replanting and use of inefficient production techniques

PPIs linked to this practice & associated challenges

► **Ban on charcoal production – Limited enforcement.** The 2018 nationwide ban on logging effectively outlawed charcoal production as well. **It still went on however, fuelling widespread corruption.** The Section 67 of the 2016 Forest Conservation and Management Act also prohibits charcoal production in public forests without a license or permit.

► **Production licenses – Limited enforcement.** The 2009 *Forest (Charcoal) Regulation^{lxxii}* provides a framework for the production, transport, and marketing of sustainable charcoal. Under the 2019 *Energy Act*, county governments are responsible for the regulation and licensing of charcoal production, transport and distribution. Producers are required to join charcoal producers' associations (CPAs) to obtain production licenses. Transporters must obtain a permit from KFS. Retailers can only trade with licensed producers. The regulation establishes a licensing committee, which oversees production zones, tree species and number of trees used for production, technology to be used, a reforestation or conservation plan. However, **the formal permit system was weakly enforced, due to corruption among forest officers. Some counties have started to establish their own regulations, but it is yet to be seen if they will prove more effective than the national regulation^{lxxiii}.**

► **Sustainability guidelines for CPAs – Limited enforcement.** The 2009 *Forest (Charcoal) Regulation* confers a key role to CPAs in promoting sustainable charcoal production and self-regulation. It requires them to establish a written constitution, develop a conservation and reforestation plan, and document the kiln technologies and tree species they use to make charcoal. **But CPAs lack capacity to comply with it and to access formal financing for replanting and purchasing improved production technologies. Moreover, the ban on logging (see above) led to adverse effects, as producers who continued illicitly had no incentive to adhere to sustainability guidelines mandated in the Charcoal Rules.** Making coal production illegal has also hindered improvements to the policy framework and reduced public support. Although the ban entailed a surge in charcoal price, profits are captured by intermediaries.

► **Categorization of charcoal as “renewable energy” – Lack of supporting measures.** The 2019 *Energy Act* classifies charcoal as a renewable energy^{lxxiv}. The government should provide “an enabling framework for the efficient and sustainable production”, **but no roadmap has been elaborated to operationalize this provision.**

► **Policies on sustainable/reduction of charcoal use – Limited enforcement.** Charcoal use remains legal. Charcoal sector regulation involves the Forestry and Energy Ministries, leading to coordination complexities and misalignment between supply and demand-side policies. The 2018 *Energy Policy* set the target of phasing out charcoal as a household energy source by 2022^{lxxv} **but it lacked resources for implementation.** The *Bioenergy Strategy 2020-2027^{lxxvi}* provides a framework for the transition to clean cooking with bioethanol, biogas and improved charcoal kilns. There has been some success for consumer-financing schemes for improved cookstoves, **but the market is undermined by poor product quality^{lxxvii}.**

Other harmful practices Monocrop plantations of exotic trees (eucalyptus, cyprus, pine)¹⁰; Use of wasteful technologies (circular saw, bench and tractor driven saw, old sawmills)

Degree of biodiversity mainstreaming



¹⁰ It used to be supported by the government through exotic trees seeds and nurseries subsidies, but public action is now oriented towards indigenous species and diverse plantations, which are more resilient to climate change.

ECONOMIC POLICY

Forestry is one of the key value chains targeted by the government, as part of the natural resources sector^{lxxviii}. The President announced his intention to lift the ban on logging to create job opportunities and support economic growth. However, commercial forestry has remained underdeveloped in Kenya, due to the government's focus on conservation aspects from the 2005 *Forest Act*, reinforced by the country's adherence to the REDD+ mechanism¹¹. To answer the country's growing demand in wood, the government's attention is likely to shift towards more support for commercial plantations. Forestry also represents a source of livelihoods for many adjacent communities.

TRADE POLICY

The ban on logging has resulted in a shortage of wood and to the increase of imports of potentially illegal timber, especially from the DRC and China. Kenya's wood imports rose from around \$50m in 2017 to \$80m in 2018^{lxxix}.

- ▶ **Standards on wood imports from high-risk countries – Absence.** Kenya lacks regulations on wood imports. Introducing traceability requirements and bilateral agreements with main suppliers could help reduce the risk of imported deforestation. However, all restrictions on imports should be combined with support to local plantations, to avoid fuelling illegal logging in national forests.

Degree of biodiversity mainstreaming



Suggested priority measures to implement to align public policies (sectoral, economic and commercial) and biodiversity conservation

The suggested measures presented below were drawn up based on a literature review and interviews with experts. They summarize the suggested measures presented in the previous paragraphs on PPIs, in response to their current content and the gaps identified in terms of biodiversity mainstreaming

Pressure on biodiversity	Suggested priority measures	Type of policy	Type of PPI	Type of measure
Natural resources overexploitation	Establish a clearer separation between KFS's branch in charge of forest exploitation and branch in charge of forest protection, to avoid conflicts of interest.	Sectoral	Other	Repurpose
	Improve KFS resources for law enforcement, including newly recruited staff training – both on forest protection and management – and equipment – such as vehicles; and ensure adequate distribution of foresters over plantations and indigenous forests.	Sectoral	Other	Strengthen
	Build foresters' capacity in working collaboratively with Community Forest Associations, ensuring effective large-scale replanting initiatives, proper seedling maintenance and adequate management of the shamba system.	Sectoral	Other	Strengthen
	Partially lift the ban on logging in public forests to facilitate forest management operations, maintain forest health, and preserve ecosystem services, including carbon storage. The partial lift should be contingent on the availability of enough foresters to effectively monitor the operations.	Sectoral	Regulatory	Repurpose
	Enhance the technical coordination of the National Tree Growing Restoration Campaign to improve the management of planting initiatives, upgrade planting materials - including	Sectoral	Economic	Strengthen

¹¹ This United Nations' forest protection program provides financial support to countries that put a formal plan in place to reduce carbon emissions from deforestation and forest degradation.

indigenous species – and earmark specific resources for seedlings maintenance.			
Allocate human and financial resources to update forest plantations management plans.	Sectoral	Regulatory	Enforce
Develop forest concessions through financial incentives to leverage private investments for plantations development, alongside clear guidelines for sustainable forest management.	Sectoral	Economic	Enforce
Evaluate the feasibility of replacing the shamba system with the concession of forest plantations, while ensuring a defined role for CFAs.	Sectoral	Regulatory	Repurpose
Redirect resources currently used for forest fencing towards the effective implementation of Participatory Forest Management (PFM), as outlined in the 2016 forest law.	Sectoral	Other	Repurpose-Enforce
Strengthen the framework for Payments for Ecosystem Services (PES) and carbon financing in forestry to fund forest quality enhancement and develop fair benefit-sharing mechanisms, as outlined in the 2016 forest law.	Economic-Sectoral	Economic	Strengthen
Revise the hammer marks system to allow for better traceability and identification of illegally sourced products and use it as a foundation for establishing a national standard for sustainably harvested timber.	Sectoral	Regulatory	Repurpose-Enforce
Revise forest zonation to establish a core conservation area, surrounded by a buffer zone designated for multiple uses, such as timber and non-timber forest product (NTFP) harvesting; and convert all forest plantations within the core conservation zone back to indigenous forests.	Sectoral	Regulatory	Repurpose
Assess the feasibility of lifting the ban on charcoal production under strict conditions, to formalize the sector and better monitor practices.	Sectoral	Regulatory	Abolish-Enforce
Promote alternative livelihoods for charcoal producers (biochar, climate-smart agriculture, NTFP, etc.)	Sectoral	Economic-Other	Strengthen
Allocate resources to enforce policies reducing demand for charcoal and promoting alternative energy sources.	Sectoral-Energy	Economic-Regulatory	Strengthen-Enforce
Develop traceability requirements on wood imports stemming from countries with high risk of illegal logging.	Trade	Regulatory	Introduce

Abbreviations

AFD	French Development Agency	KALRO	Kenya Agricultural and Livestock Research Organisation
ASAL	Arid and Semi-Arid Lands	KEFRI	Kenya Forestry Research Institute
ASTGS	Agricultural Sector Transformation and Growth Strategy	KFS	Kenya Forest Service
BETA	Bottom-Up Economic Transformation Agenda	KLIP	Kenya Livestock Insurance Program
CFA	Community Forest Association	NBSAP	National Biodiversity Strategy and Action Plans
CIDP	County Integrated Development Plans	NDC	Nationally Determined Contribution
COMESA	Common Market for Eastern and Southern Africa	NTFP	Non-Timber Forest Product
CPA	Charcoal Producer Association	PCPB	Pest Control Products Board
EAC	East African Community	PELIS	Plantation Establishment and Livelihood Improvement Scheme
EMCA	Environmental Management and Co-ordination	PES	Payment for Environmental Services
HHP	Highly Hazardous Pesticide	PFM	Participatory Forest Management
IBLI	Index-Based Livestock Insurance	PPI	Public Policy Instrument
ILRI	International Livestock Research Institute	SPS	Sanitary and Phytosanitary
IPBES	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services	WWF	World Wildlife Fund
IUCN	International Union for Conservation of Nature		

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^{xxi} Budget Policy, 2024, p. 56 ([link](#))

^{xxii} Ministry of Agriculture, Livestock, Fisheries and Irrigation, 2019, Agricultural sector transformation and growth strategy 2019-2029, p. 4 ([link](#))

^{xxiii} *Ibid.*

^{xxiv} Budget Policy, 2024, p. 137

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^{xxvii} Agroberichten Buitenland, 16/01/2024, Sustainable biopesticides for horticulture challenges in Kenya ([link](#))

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