

HOW CAN KENYA’S RANGELAND COUNTIES MANAGE INVASIVE SPECIES?

Public Awareness for Timely Response

- Create public awareness on invasive species among local communities by sharing information in an easy and practical language through brochures, posters, billboards, media programs
- County governments and key stakeholders should organize meetings, workshops and conferences to generate interest and awareness on best ways to control invasive species
- Enhance extension services and technology transfer by engaging local communities through programs such as Farmer Field Schools (FFS) and National Agriculture and Livestock Extension Programme (NALEP)

Collaboration in Research and Monitoring

- Develop county specific invasive plant species checklists and avail them to land and environment offices as well as local communities
- County governments should regularly engage technical experts in identification, survey and monitor nonindigenous invasive species population and coverage in the area
- Collaborate with research institutions and Universities within each county to conduct targeted studies on invasive species (and phytosanitary risks) to map their extent, assess impacts and design innovative control measures
- Embrace citizen science technology in invasion surveillance and monitoring such as the Invasive Species Mapper Mobile App
- Make use of local community cultural systems and traditional knowledge in recognition and surveillance of newly introduced invasive plants as well as monitoring their spread and effects
- Since invaders do not know political boundaries, there is need for integrative multi-sectoral inter-County coordination and collaboration in the management, control, eradication, research and monitoring of invasive species between neighboring counties

Management and control of invasions

- Use and upscale tested and validated control e.g. manual, mechanical, chemical and biological methods against targeted invasive species
- Restore and rehabilitate areas where invasive species have been removed through re-seeding with native species
- Provide incentives to promote control of invasions by local communities and landowners
- Since most invasive species may never be eradicated, local communities must learn to live with and if possible exploit the positive attributes of such species – county government to explore technologies for exploitation and commercialization of invasive species and their products such as animal feeds and bio-fuels.
- Pre-screen all intended species introductions against national and local invasive species check lists
- Use of fire in the late dry season should be discouraged or monitored, to avert plant invasion
- Where control is difficult, mitigate impacts of invasive species by methods other than managing the invasive species itself
- Make deliberate efforts to enhance participation of Vulnerable and Marginalized Groups (VMGs) in the control and management of invasive species

Resource mobilization and capacity enhancement

- County governments should provide funding and incentives to local communities/localized programs to participate in early detection, surveillance, control and management of invasive species to slow the spread of existing invasive species into uninvaded areas
- Train ‘parataxonomists’ and build capacity of county government staff concerned and local communities on identification, survey and monitoring of invasive species
- Develop invasive species toolkits (handbooks/guidebooks) for identification and management methods and practices

Policy and legislation

- Enforce all legal requirements related to management of invasive species especially ESIA’s on development projects and agricultural activities
- Where appropriate, adopt the National Strategy and Action Plan for the Management of Invasive Species at county level
- Enact Invasive species control and management policy at county level
- Involvement local communities in in land-use planning, law enforcement and management of the environment.

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<https://www.cbd.int/invasive/>

<https://www.iucn.org/theme/species/our-work/invasive-species>

How this policy brief was produced

Various national and international legislations, strategies, policies, laws and recent research work relating to invasive species management were reviewed and analyzed then validated through consultative stakeholder meetings involving county government officials, expert institutions and local communities.

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POLICY BRIEF

RANGELANDS & INVASIVE SPECIES

Control and management of
invasive plant species in Kenya’s
rangelands for improved ecosystem
health and livestock productivity

RANGELANDS & INVASIVE SPECIES

Rangelands or Arid and Semi-Arid Lands (ASALs) confer diverse socio-economic and ecosystem services to society such as provisioning of food, medicine, timber, fuelwood as well as regulating and supporting services such as climate regulation, scenic beauty and water catchment. Among the key human livelihoods supported by rangelands are pastoralism and tourism. However, rangelands often suffer poor land-use planning and frequent disturbances from agro-pastoralism activities that render them susceptible to the influx of invasive plants, a major global threat to landscapes and ecosystems. The spread of invasive plants in Kenyan ASALs can be attributed to unauthorized introductions, movement of plant materials, disturbances from nomadic pastoralism, shifting cultivation and general land degradation. Invasions can disrupt entire ecosystems by threatening native or other preferred species through competition, habitat modification or by altering species and community dynamics.

The most serious threat posed by invasive species to rangeland livelihoods in Kenya today is the degradation of pasture in the ASALs. This happens through displacement of pasture, hence reduction of grazing area. Most woody invaders take advantage of over-grazed grasslands and other degraded areas, subsequently adapting to harsh conditions that the native plants may not tolerate. In addition, certain invasive plants cause direct physical injury to livestock e.g. by inflicting wounds and ulcers in the mouth and intestines as in the case of Prosopis and Opuntia. Such challenges have contributed immensely to declines in livestock productivity in the ASALs. If left uncontrolled, the spread of invasive species will continue to adversely affect the economies of counties in ASALs where over 70% of Kenya’s livestock and wildlife occur.



WORLD BANK GROUP



What is an ‘invasive species’?

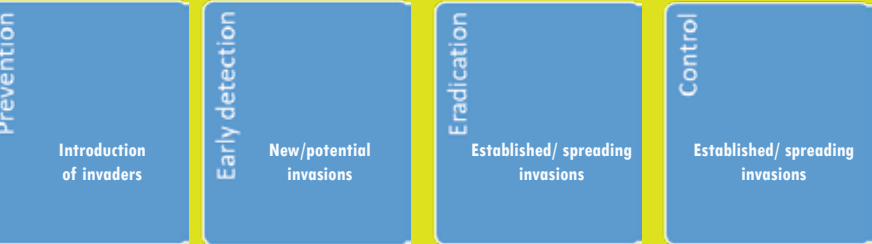
A non-indigenous species introduced, accidentally or intentionally, to a place outside its natural geographic range and which dominates the indigenous species or takes over the habitat becoming destructive to the environment or human interests.

A number of hypotheses have been advanced to explain the proliferation of invasive species: i) deficiency of natural enemies in the introduced range, ii) increased competitive ability, iii) increased resource availability and iv) emergence of more vigorous genotypes in the introduced range.

How do invasive plants spread in rangelands?

- Land degradation through overstocking and overgrazing
- Infrastructural development that involve movement of equipment and earthmoving operations
- Movement of livestock
- Use of some species as food, forage, live fences
- Intense or frequent use of fire. Although fire enhances re-sprouting of grass, it causes seedling mortality, species loss hence increased opportunities for colonization of invasive species

Four hierarchical approaches in managing invasive species



****Prevention is the best strategy in invasion management****

Key policies addressing invasive species

Invasive species have been subject to various international and national policy interventions. At the global level, there exist nearly fifty internationally-agreed legal instruments and guidelines addressing the introduction, control, and eradication of Invasive Alien Species (IAS). Of particular importance include the Convention on Biological Diversity (CBD) e.g. Article 8 (h) and Aichi Biodiversity Target 9, IUCN Invasive Species Specialist Group (ISSG) and UN Sustainable Development Goal 15.

In Kenya, the most substantive law on the control of invasive plants in agricultural land is the Control of Noxious Weeds Act CAP 325, which is implemented by departments under the Ministry of Agriculture. It provides measures that shall be taken by the Government and individuals for the suppression of weeds that are declared noxious by the Minister for Agriculture. The declaration may apply to a specific area or parts of Kenya and requires the affected landowners to report the presence of or destroy the weeds.

Additionally, we have the overarching Environmental Management and Coordination Act (EMCA) 2009 on land and the resources management where invasive species are also covered. In 2013, Kenya Wildlife Service produced a comprehensive National Strategy and Action Plan for the Management of Invasive Species, which, although focuses mainly on protected areas, is applicable to Kenya’s rangelands. These policies are further supported by the Wildlife Act 2013, which criminalizes the willful movement of invasive species by people.

Major Kenyan laws and strategies on invasive species management

Control of Noxious Weeds Act CAP 325; EMCA 2009; The Wildlife Act, 2013; The Forest Act 2016; The Wildlife Conservation and Management Act, 2013; The National Wildlife Conservation and Management Policy, 2012; Kenya State of the Environment and Outlook 2010; Vision 2030; National-Spatial-Plan 2015-2045; National Strategy and Action Plan for the Management of Invasive Species in Kenya’s Protected Areas; Strategy for the Development of Northern Kenya and other Arid lands; Agriculture, Fisheries and Food Authority Act 2013; Seeds and Plant Variety Act CAP 326; Plant Protection Act CAP 324; The Constitution of Kenya 2010; CIDPs

Institutional Context

The profound link between invasive plants, ecological integrity and livelihoods, calls for inter-sectoral policy mainstreaming guided by a combination of stakeholder engagement (best knowledge) and analysis of documented data (best science). Furthermore, there should be integrated county and national government actions with regard to early warning systems, eradication and control attempts through increased awareness, capacity building and political will in an enabling policy, institutional and implementation environment. Below is a suit of stakeholders with mandate and/or capacity to manage invasive species through research, control and monitoring.

KWS, KEFRI, NEMA, NMK, KFS, KALRO, DRSRS, KEPHIS, NDMA, NRT/ICRAF, RCMRD, CABI, ILRI, GIZ, IUCN, FAO.

Status of invasion in Kenya’s rangelands

The consequences of invasions are dire and managing invasive species is a costly affair. UNEP estimates that alien invasive species cost the global economy \$1.4 trillion annually. As the new investment frontier (with increased trade, travel and movement of goods), Kenya’s rangelands are at an increased risk of invasions due to poor land use planning and frequent disturbances associated with traditional pastoral activities. Given the vastness of Kenya’s ASALs, exacerbated by the communal land ownership tenure, pastoral lifestyle, and weak legislative framework, widespread invasions in these areas present very high environmental and financial costs.

Among the top ten invasive plant species affecting Kenya’s ASAL counties include; Prosopis juliflora, Opuntia ficus indica, Senna occidentalis, Lantana camara, Acacia reficiens and Parthenium hysterophorus (congress weed). So far, Prosopis juliflora (Mesquite), one of the most widespread dryland invasive species in north and east Africa, is known to have already invaded 500,000 and 700,000 hectares in Kenya and Ethiopia, respectively. In managing invasions, physical, chemical, mechanical or biological methods have been tested, either singly or in combination. For example, Centre for Agriculture and Bioscience International (CABI) has piloted biological control on Opuntia in Laikipia County using natural enemies like Cactus moth (Cactoblastis cactorum) and the cochineal insect (Dactylopius opuntiae) with remarkable success.

Gaps and challenges in managing invasive species in Kenya;

- Limited capacity and taxonomic knowledge for recognition and monitoring of invasive species
- Poor predictive capacity - since the ongoing limited control measures are based on biological studies conducted elsewhere
- Control measures are haphazard and inconsistent, generally being underfunded and dependent on political goodwill
- Lack of sufficient synergy among relevant national and county government ministries; and expert agencies
- Limited studies quantifying the costs associated with invasive plant species
- The policy environment does not fully enhance capacity to respond to and manage invasions



Ipomoea hildebrandtii

Some of the notorious invasive species in Kenyan rangelands



Prosopis juliflora



Parthenium hysterophorus



Opuntia ficus indica