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Working Paper

Nature-based solutions and carbon credit initiatives in Kenya: An overview of the governance context

DIIS Working Paper, No. 2025:15

Provided in Cooperation with:

Danish Institute for International Studies (DIIS), Copenhagen

Suggested Citation: Kisiwa, Abdalla et al. (2025) : Nature-based solutions and carbon credit initiatives in Kenya: An overview of the governance context, DIIS Working Paper, No. 2025:15, ISBN 978-87-7236-218-2, Danish Institute for International Studies (DIIS), Copenhagen

This Version is available at:

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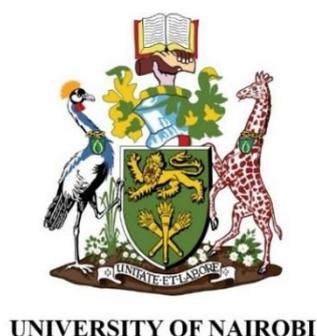
NATURE-BASED SOLUTIONS AND CARBON CREDIT INITIATIVES IN KENYA: AN OVERVIEW OF THE GOVERNANCE CONTEXT

Abdalla Kisiwa, Abel Kiprono, Colleta Nabwile, Emilie Falk Due, Iben Nathan, Jane Mutune, Jasmine Vorburger, Marie Ladekjær Gravesen, Martin Marani, Martin Reinhardt Nielsen, Mikkel Funder, Rahma Hassan, Thuita Thenya

Acknowledgements

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This Working Paper was developed by the joint research project *Governing Nature-based Climate Solutions: Prospects for a just green transition in Kenya (JUCAN – Justice, Carbon and Nature)*. The project is a collaboration between the University of Nairobi, the University of Copenhagen and the Danish Institute for International Studies, with funding from the Consultative Research Committee for Development Research under the Danish Ministry of Foreign Affairs.



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Cover photo: Grazing- and farmland in Mbirikani, Kenya, 2025. Photo: Mikkel Funder

DIIS WORKING PAPER 2025: 15

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ISBN 978-87-7236-218-2 (pdf)

DIIS publications can be downloaded free of charge from www.diis.dk

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LIST OF ACRONYMS

CBB	Climate, Community and Biodiversity Standards
CBD	United Nations Convention on Biological Diversity
CDA	Community Development Agreement
CDM	Clean Development Mechanism
FPIC	Free, Prior and Informed Consent
NbS	Nature-based Solutions
NCCAP	National Climate Change Action Plan
EMCA	Environmental Management and Coordination Act
IP	Indigenous Peoples
ITMO	Internationally Transferrable Mitigation Outcomes
IUCN	International Union for Conservation of Nature
JUCAN	Governing Nature-based Climate Solutions in Kenya: Justice, Carbon and Nature
MoU	Memorandum of Understanding
LC	Local communities
NDC	Nationally Determined Contributions to the Paris Agreement on Climate Change
NRT	Northern Rangelands Trust
REDD+	Reduced Emissions from Deforestation and Degradation
UNFCCC	United Nations Framework Convention on Climate Change
VCS	Verified Carbon Standard

ABSTRACT

Nature-based Solutions (NbS) have in recent years emerged in policy agendas as an umbrella term for approaches that address societal challenges through ecosystem conservation and restoration. While the literature has examined numerous aspects of Nature-based Solutions, there has been little research on the governance and institutional dynamics of such projects. The collaborative research project *Governing Nature-based Climate Solutions: Justice, Carbon and Nature (JUCAN)* examines this issue in the context of Kenya. Kenya's current government pursues a policy of becoming Africa's 'carbon hub', and a number of projects are currently being implemented in grasslands, forests and coastal areas that attract funding from carbon credit sales on the voluntary carbon market. This Working Paper provides a preliminary overview of the national governance context for Nature-based Solutions in Kenya, as a background for more in-depth grounded studies of individual NbS projects. The paper discusses the historical context, outlines the evolution of NbS and related approaches in policies and laws, describes key stakeholders and frameworks in project governance, and provides an overview of the finance landscape.

EXECUTIVE SUMMARY

Nature-based solutions (NbS) have emerged in international and domestic policy and project agendas as an umbrella term for approaches that address societal challenges through ecosystem conservation and restoration. NbS projects often aim to address three main aims simultaneously, namely social development, biodiversity conservation and climate change.

In many African countries, the development of national policies for NbS and the ongoing implementation of NbS projects is an evolving and often contested process. While a number of recent studies have examined various aspects of NbS projects, there has been limited research on the governance and institutional dynamics of NbS in practice. The collaborative research project *Governing Nature-based Climate Solutions: Justice, Carbon and Nature (JUCAN)* seeks to address this knowledge gap by examining the governance and outcomes of NbS projects in Kenya.

Kenya is a highly relevant setting in which to explore these issues. Kenya has a relatively elaborate institutional framework for addressing climate and environment issues and a significant number of NbS and NbS-related projects, including some of Africa's first projects to engage the voluntary carbon markets. In Africa, Kenya currently ranks second in issuance of NbS carbon credits after the DRC, and the current government aims to make Kenya Africa's 'carbon hub'.

The current Working Paper provides an overview of the national context of NbS in Kenya, with a focus on NbS projects financed fully or partly by carbon credits. Specifically, the paper examines (i) the historical context for NbS in Kenya, (ii) the legal and policy framework, (iii) NbS project governance, and (iv) the finance landscape. It should be noted that the paper presents preliminary findings and is work in progress that will serve as contextual background for more in-depth studies at the project level. The main findings are as follows.

Historical context of NbS in Kenya

Land-based carbon offset initiatives emerged in Kenya in the mid-2000s, with a few early projects spearheading the carbon credit agenda. The development of REDD+ frameworks on forests and climate, supported by multilateral donors, also contributed to the agenda.

The term Nature-based Solutions (NbS) has emerged more recently and is applied to both carbon and non-carbon financed projects. In some cases, NbS serves as a point of convergence between offset and non-offset projects, creating hybrid models of finance and rationale.

Current NbS projects in Kenya operate within a historical context of top-down interventions in natural resource governance reaching back to colonial times. In some areas, this legacy contributes to community concerns over external conservation and land restoration initiatives.

NbS in Kenya's legal and policy framework

Kenya's most recent Nationally Determined Contribution (NDC) to the Paris Agreement on Climate Change identifies NbS as a key feature in mitigation and adaptation, and the amended Climate Change Act of 2023 explicitly refers to NbS. However, the term is not yet widely embedded in broader policy frameworks.

Carbon trading, by contrast, has strong roots in policy since the early 2010s and gained momentum under the Ruto administration from 2022. The 2024 Carbon Regulations stipulate overall benefit-sharing guidelines, including 40% for communities in land-based projects and 25% in non-land-based projects. The share provided to project developers and governments is currently under debate, with one proposal suggesting a 40/40/20 % share, respectively.

While Kenya's constitution and the Environmental Coordination and Management Act provide a foundation for environmental justice, explicit references to 'justice' in climate-related policies are limited. The issue of rights is more prominent in policies and the legal framework, particularly in forest sector policies and REDD+ guidelines. However, land laws remain ambiguous on community land rights, reflecting a shift from progressive language in the 2010s to a more restrained approach recently.

NbS project governance

NbS governance in Kenya involves a diverse set of actors, including investors, carbon brokers, NGOs, government agencies, donors and verification bodies. Kenya's developing legal framework for NbS-related carbon projects is relatively advanced, but its implementation in practice is still ongoing and outcomes on the ground therefore remain to be seen.

Meanwhile, most current NbS projects funded by carbon credits have been developed to comply with standards in the international voluntary carbon markets, such as those under Verra. These are relatively well-developed in terms of community inclusion and engagement, but their interpretation and implementation in practice varies in practice and are under-studied. Alternative standards for NbS, such as the Global Standard developed by IUCN, promote inclusive and rights-based approaches but are voluntary and only applied by a few projects in Kenya so far.

A better understanding of how NbS projects funded by carbon credits play out in practice is needed. Existing literature points to persistent challenges around land rights, benefit sharing and inclusion, while strategies for addressing these issues and their outcomes remain underexplored.

Kenya's NbS-related finance landscape

Kenya currently ranks among Africa's top recipients of public and philanthropic climate finance. The country is ninth globally in voluntary NbS carbon credit issuance, second only to the DRC in sub-Saharan Africa. Most carbon credits currently issued in Kenya are NbS-related, aligning with global trends where NbS has overtaken renewables.

Carbon credit issuance and retirements in Kenya have been positive over the past five years, though not all issued credits have been retired. Projects remain susceptible to the volatility of international carbon markets which have recently been impacted by public debate over transparency and greenwashing.

1. INTRODUCTION

This Working Paper was developed by the joint research project *Governing Nature-based Climate Solutions: Prospects for a just green transition in Kenya (JUCAN – Justice, Carbon and Nature)*. The project is a collaboration between the University of Nairobi, the University of Copenhagen and the Danish Institute for International Studies, with funding from the Consultative Research Committee for Development Research under the Danish Ministry of Foreign Affairs. The Working Paper presents work in progress that will be developed further. Note that the paper mainly focuses on Nature-Based Solutions that generate income from carbon credits, as per the emphasis of the JUCAN project.

1.1 Nature-based Solutions: Evolving and contested

Nature-based solutions (NbS) have in recent years emerged in international and domestic policy and project agendas as an umbrella term for approaches that address societal challenges through ecosystem conservation and restoration (Gravesen and Funder, 2021). NbS projects typically address three main aims, namely biodiversity conservation, climate change and social development. NbS seeks to achieve these goals simultaneously by capitalising on the synergetic effects of protecting, restoring and sustainably managing forests, wetlands, soils, grasslands, coastal landscapes etc. NbS initiatives typically place substantial emphasis on nature restoration alongside conservation, a departure from an earlier tendency to focus mainly on the latter.

BOX 1. DEFINITIONS OF NATURE-BASED SOLUTIONS

Nature-based Solutions are ‘actions to protect, conserve, restore, sustainably use and manage natural or modified terrestrial, freshwater, coastal and marine ecosystems, which address social, economic and environmental challenges effectively and adaptively, while simultaneously providing human well-being, ecosystem services and resilience and biodiversity benefits’.

UN Environment Assembly official definition, 2022

Nature-based Solutions are ‘actions that protect, sustainably manage, or restore natural ecosystems, that address societal challenges such as climate change, human health, food and water security, and disaster risk reduction effectively and adaptively, simultaneously providing human well-being and biodiversity benefits’.

Republic of Kenya: The Climate Change (Amendment) Act 2023

The definition of the term Nature-based Solutions has evolved over the years, with the UNEA definition of 2022 among the most prominent (Box 1). In recent years NbS has been referred to in UNFCCC and CBD negotiation texts and in the strategies of multilateral institutions and donors, although with varying degrees of commitment.

NbS is however a contested concept. The definition and application of NbS is considered vague by some and has been accused of being a vehicle for greenwashing and a means to repackage historical top-down environmental interventions (Melanidis and Hagerman, 2022; Osaka et al., 2021). These concerns have been particularly strong in relation to NbS actions that include climate change mitigation efforts and associated carbon credit markets where countries, corporations and individuals – typically in the North – seek to offset emissions by investing in conservation and restoration of forests, grasslands and wetlands in the South.¹

Carbon markets provide options for offsetting and reducing greenhouse gas emissions through the trading (selling and buying) of carbon credits.² Participation in these markets is either mandatory (i.e. buyers and sellers are obliged to comply with certain laws) or voluntary (i.e. buyers have no legal obligations but choose to participate). This includes projects operating under Reduced Emissions from Deforestation and Degradation schemes (REDD+), which in some places have been contested by local communities and Indigenous Peoples' Organisations for undermining their rights to land and other natural resources and not delivering promised benefits. REDD+ schemes and associated carbon credit trading have been implemented and debated for several decades – well before the NbS concept became prominent – but are now considered part of the NbS umbrella by many stakeholders (UNDP, 2021; WB, 2021).

In an effort to address concerns over NbS approaches, various attempts have been made to establish principles for 'good' NbS (Boyland et al., 2022; Cohen-Shacham et al., 2019). A Global Standard for NbS has been developed (IUCN, 2020a, 2020b, 2025) which includes attention to rights and governance (see Box 6 in Section 4). Following the standard is, however, voluntary and it remains to be seen how widely it will be applied.

1.2 Background and contents of the Working Paper

The development of national policies for Nature-based Solutions (NbS) and the ongoing implementation of NbS projects is an evolving and often contested process in many countries. While a number of recent studies have examined NbS projects (Ferreira et al., 2020; Gravesen and Funder, 2021; Seddon, 2022), there has so far been limited research on the governance processes and institutional dynamics of NbS in practice.

The JUCAN research project explores these issues in the Kenyan context. Kenya is a highly relevant setting in which to explore these issues. The country has a well-developed framework for addressing climate and environment issues and a significant number of NbS and NbS-related projects, including some of Africa's first projects to engage the voluntary carbon markets. The country also currently has a leadership which aims to make Kenya Africa's 'carbon hub'.

The collaborative research project *Governing Nature-based Climate Solutions: Justice, Carbon and Nature* (JUCAN) examines the priorities and perceptions of different NbS stakeholders in Kenya, the institutional dynamics and governance arrangements of NbS, the social and environmental

¹ A carbon offset refers to greenhouse gas emission reductions in one place of the globe to make up for emissions which are occurring in another place of the globe. A carbon project is therefore any activity or action that reduces the amount of carbon emissions going into the atmosphere or stores greenhouse gas in vegetation and or soils.

² A carbon credit represents one tonne of carbon dioxide equivalent (CO₂e) reductions.

outcomes, and the implications for policy and practice. The project is funded by the Consultative Research Committee for Development Research under the Danish Ministry of Foreign Affairs.

The main focus of JUCAN is a grounded study of specific NbS projects in Kenya that aim to simultaneously address community development, climate change mitigation and biodiversity, and which seek to generate income from carbon credits on the voluntary carbon markets.

The current Working Paper provides a preliminary contextual overview for these in-depth studies, with a focus on NbS projects financed fully or partly by carbon credits. The paper draws partly on primary data analysis, partly on secondary sources. It has the following structure:

The Working Paper first provides a brief introduction to the concept of NbS, then proceeds to a discussion of the historical background to NbS in Kenya and the evolution of NbS and related concepts in Kenya's legal and policy framework. The paper then moves to the project level, providing an overview of key actors, a description of formal project governance frameworks and some main lessons from past studies of NbS projects in Kenya. Lastly the paper provides overview data on Kenya's NbS finance landscape, including public climate finance but with a particular emphasis on trends in Kenya's voluntary carbon market and NbS-related projects.

2. HISTORICAL CONTEXT OF NBS IN KENYA

2.1 Colonial and post-independence interventions

In Kenya, a historical understanding of NbS is closely linked to the long and chequered debate on solutions to land degradation in Kenya, especially in the country's arid environments (Anderson, 1987). In this respect, some interventions by Kenya's colonial government resemble today's NbS projects (Hill, 1966).

For instance, the colonial government experimented with new grazing schemes as a result of perceived overstocking and overgrazing in pastoral areas, as well as soil erosion measures in community farmlands (Anderson, 1984). The official aims of these initiatives were to avoid environmental degradation and support more efficient livestock and crop production methods, but behind these narratives were colonial concerns of 'ordering' traditional resource management practices including pastoral mobility (Ombati, 2025; Shanguhya, 2024).

Post-independence efforts to address environmental degradation and ecosystem restoration carried forward aspects of colonial rationales, including the notion that community use and management of natural resources were outdated and required external intervention and 'modernisation' (Anderson, 2002). This included government efforts to halt and reverse land degradation and restore degraded ecosystems for sustainable land use. Initial approaches were top-down and typically fared poorly over time. As Mutisya et al. put it:

'Coercion (forceful) and persuasive (supply driven) approaches lead to quick but unsustainable development' (Mutisya et al., 2010: 14).

With time, a greater emphasis on inclusion and community-driven approaches developed in government efforts (Mutisya et al., 2010). At the same time, Kenya's devolution process has moved responsibility for agricultural support and extension to the county level. Policies on land and natural resource governance have also adopted more inclusive approaches, though not always as transformative in practice as in principle (Ajwang et al., 2023; Hassan et al., 2023). Numerous central and local government projects – often donor funded – have evolved, aiming to protect and restore ecosystems for the benefit of nature and people. A multitude of NGO-initiated community-based approaches have been implemented with similar aims. Wangari Maathai's rural tree-planting movement, in particular, was a pioneering civil society effort that addressed environmental and social challenges in ways that closely resemble what is now known as NbS.

Nevertheless, the top-down interventions of the past have left a scepticism in many communities about external interventions in natural resource management. At the same time, the highly politicised nature of land rights and access to natural resources in Kenya – both historically and contemporarily – means that concerns over losing land and access rights are very high. These concerns have been a major factor in the scepticism and conflicts that have met some green interventions in Kenya (Muok et al., 2021; Wachira et al., 2024).

2.2 Emergence of carbon offsetting projects

Internationally, the 1997 Kyoto Protocol introduced the global carbon offset mechanism, meaning that countries like Kenya could benefit from carbon trade projects and trading. Most Kenyan projects under the Kyoto Protocol have, however, focused on emission reductions in the energy sector. Land- and nature-based projects have primarily focused on the voluntary carbon market (see Section 5), within four key areas:

- Forest conservation projects like REDD+, with a focus on enhancing forest carbon stocks through protecting and enhancing forest cover.
- Agricultural-related carbon projects, focusing on enhancing practices that capture carbon in the soil and trees through practices like crop rotation and organic manure in place of pesticides as well as farm tree planting/agroforestry measures, both of which support carbon sinks while enhancing crop productivity.
- Grassland management, with a focus on rangelands conservation through carbon soil capture from rotational grazing and enhanced grasslands regeneration and retention of precipitation.
- Coastal and marine ecosystems, where so-called 'blue carbon' approaches, especially in mangrove areas, are prominent.

Early and influential examples of such projects in Kenya include:

- *The International Small Group Tree planting Programme (TIST)* is an ongoing reforestation programme working with subsistence farmers, financed in part through verified carbon credits on the voluntary carbon market. Initiated in Tanzania in 1999, it began activities in Kenya in 2004 with USAID support and has a large small-scale farmer base around Mt Kenya and in the Aberdare ranges.
- *The Kasigau REDD+ Corridor Project* was also among the first carbon offset initiative in East Africa to enter the voluntary carbon market. Initiated in 2005, the project focuses on reducing emissions from avoided deforestation. The project started selling carbon credits in 2009 and has been particularly influential in promoting the concept of forest carbon trading in Kenya (Bernard et al., 2014).
- *The Kenya Agricultural Carbon Project (KACP)* was among the first agricultural carbon projects in Kenya. It was established in 2008 as part of the World Bank-supported projects on agricultural carbon finance, which worked with small-scale farmers in western Kenya (Atela, 2015).
- In the pastoral rangelands, *the Northern Rangelands Carbon Project (NKRCP)* is among the largest soil carbon removal projects globally. The project's first issuance of carbon credits for the 2013–2016 period amounted to 3.2 million, with revenue distributed to the participating conservancies.³
- Influential blue carbon projects include *Mikoko Pamoja* and *Vanga Blue Forests*, initiatives that started in 2012 and 2009, respectively, on the southern Kenya coast. The projects focus on mangrove restoration and protection and are, at least in principle, embedded in community structures (Huhxam et al., 2021).

³ Source: <https://www.nrt-kenya.org/news-2/2022/12/16/the-northern-kenya-rangelands-carbon-project-a-community-based-climate-solution-10-years-in-the-making>

While critics have questioned the governance and benefits of carbon credit projects in Kenya, numerous further projects have since been established in Kenya (see Section 5).

2.3 The REDD+ agenda

In Kenya, as elsewhere, the NbS agenda was preceded by – and links closely to – the REDD+ concept, under which REDD+ countries or projects receive payments for reducing emissions from forest loss. So far, the main focus has been on ‘avoided deforestation’ (through forest protection), but increasingly REDD+ schemes also include sustainable forest management and forest restoration.

Kenya’s 2010 National Climate Change Response Strategy and 2013–15 Climate Change Action Plan saw the first major emphasis on REDD+ in the national policy framework. Multilateral organisations have played an important role in developing the national REDD+ policy agenda. Kenya’s development of UNFCCC-aligned REDD+ policy frameworks has taken place through the so-called REDD+ Readiness process, a standardised procedure in which countries are assisted to develop national policy, institutional frameworks and capacity to engage in the UNFCCC REDD+ scheme. This has been done with support from the global Forest Carbon Partnership Facility (FCPC) administered by the World Bank, and the UN-REDD+ process supported by UNEP, UNDP and FAO. REDD+ readiness support to Kenya has been ongoing since 2009, with the most recent support finished in 2024. Outputs include a National REDD+ Strategy (2021), a national forest monitoring system and national guidelines and principles for REDD+ in Kenya.

Atela et al. (2016) examined how UNFCCC REDD+ guidelines and the Readiness process became instituted in Kenya. They found that the agenda and guidelines had been substantially taken up by the Kenya Forest Service as the national anchor of REDD+, but that there was a lack of cross-sectoral coordination and therefore incoherence with land and agricultural policies nationally and locally (Atela et al., 2016).

Due to the preparatory process, UNFCCC-aligned REDD+ projects in Kenya have so far consisted primarily of pilot activities. Most REDD+ projects in Kenya are therefore financed under the voluntary carbon markets scheme (see Section 4). It is here that practical grounded experiences with REDD+ have accumulated, meaning that some of the bigger projects have impacted the development of the national REDD+ agenda.

As mentioned above, the most prominent example is the Kasigau Corridor REDD project, the longest-running and so far, biggest provider of forest carbon credits in Kenya. Bernard et al. (2014) examined interactions between the Kasigau project and national REDD+ policy development, finding that the project had impacted national policy development through networking and field visits with key government ministries, donors and other actors. As a result, the Kasigau project became a pilot project under the national REDD+ Readiness process, and the project implementer (Wildlife Works) became a significant technical partner in drafting national REDD+ legislation (Bernard et al., 2014).

Today, REDD+ projects continue to play a major role in Kenya’s voluntary carbon market and have, in several cases, adopted NbS as a description of their activities. In 2025, Kenya became the first African country to initiate a national REDD+ registry, a digital platform where verified carbon credits and emission reductions can be tracked, thereby

potentially reducing ‘double counting’. The registry is supported by the UK PACT Programme and Conservational International, potentially followed by a similar registry to track nascent biodiversity credit schemes.

2.4 Advent of NbS projects

With the advent of the ‘NbS’ term in the past 10 years, a number of projects in Kenya now claim to be undertaking NbS of various kinds. A distinction can, as a point of departure, be made between NbS projects that generate income from carbon credits and projects that do not.

The former includes prominent carbon credit projects such as the Kasigau Corridor project, Chyulu Hills project, NRT soil carbon project, Kajiado Rangelands carbon project and the Mikoko Pamoja project. As described in the previous section, a number of these have operated since before the advent of the NbS agenda but conduct activities that fall into the NbS category in carbon markets. Several have responded actively to the emergence of the NbS agenda, adopting the NbS terminology and/or expanding their activities to align with NbS approaches. For example, the Chyulu Hills REDD+ Project was designed as an avoided deforestation project, but with recent major Apple funding, the project has initiated efforts to engage in ecosystem restoration activities and rotational grazing schemes. This is in keeping with recent trends among donors and in voluntary carbon markets towards favouring ecosystem restoration activities.

Non-carbon credit NbS projects have also become numerous in Kenya. These involve a wide variety of activities across the country’s ecosystems and are typically donor-supported. Examples include:

- Water and agriculture NbS activities under the County Climate Change Funds, such as the construction of 900 sand dams in Makueni County (Mulwa et al., 2025).
- Rangelands Ecosystem restoration activities led by the Dutch NGO JustDiggIt, which works with communities across Kenya to restore grasslands using simple restoration techniques that in some cases build on Indigenous knowledge.
- Coastal ecosystems The WWF Triple Benefits aims to address biodiversity conservation, climate resilience and human well-being through protection and restoration of mangroves, coral reefs and seagrass.
- Forests The Kenya-UK PACT Forest and Landscape Restoration project, which seeks to increase capacity on NbS implementation at local levels, including Community Forest Associations.

It is worth noting that some non-carbon credit projects and activities have become indirectly linked to carbon credit projects in recent years. For example, Denmark has supported the NRT since 2012 with a variety of other NbS-related activities, including, since 2024, activities described specifically as ‘Nature-based Solutions’ (MoFA/Danida, 2023),⁴ but does not directly support the NRT’s soil carbon projects. Likewise, the NRT and Chyulu Hills REDD+ projects have engaged in collaboration with JustdiggIt’s nature restoration activities. Such a convergence of carbon credit schemes with other types of NbS projects can be seen as a hybridisation of financing models and project rationales.

⁴ Danida-supported NRT activities described as Nature-based Solutions are rangeland and forest restoration, mangrove and coral reefs and sustainable agricultural practices (MoFA/Danida, 2023: 2 ff).

While this may make sense from a project planning perspective, it also carries risks such as lack of transparency and confusion about what activities and benefits are related to carbon markets and which are not.

BOX 2. KEY TAKEAWAYS ON HISTORICAL CONTEXT OF NBS IN KENYA

- NbS projects take place against a historical backdrop of top-down policies and interventions. This is a factor in community concerns over some NbS projects.
- Land-based carbon offset projects emerged in the mid-2000s in Kenya. A handful of early projects have been influential in promoting the carbon credit agenda.
- The REDD+ agenda has also played a significant role in developing the notion of carbon credit schemes, with support from multilateral donors.
- The NbS term is applied by both carbon credit projects and non-carbon credit projects. The interests of donors and markets have influenced adoption of the concept among projects.
- NbS is in some cases a point of convergence between offset projects and non-offset projects, potentially resulting in a hybridisation of project finance and rationales in such situations.

3. NBS IN KENYA'S LEGAL AND POLICY FRAMEWORK

3.1 International context

The United Nations Framework Convention on Climate Change (UNFCCC) of 1992 and its Kyoto Protocol of 1997 established mechanisms for greenhouse gas emission trading and clean development and gave birth to the concept of carbon credits for emission offset and reduction activities. The UNFCCC Warsaw Framework for REDD+ (Reducing Emissions from Deforestation and Forest Degradation) was adopted in 2013 and is developing mechanisms for adopting the REDD+ concept within the specific auspices of UNFCCC. The 2015 Paris Agreement at COP 21 committed parties to take more concrete measures to reduce emissions and annually report progress through the Nationally Determined Contributions (NDCs) framework.

BOX 3. NBS IN SELECTED CBD AND UNFCCC TEXTS

'Restore, maintain and enhance nature's contributions to people [...] through nature-based solutions and/or ecosystem-based approaches'

CBD Kunming-Montreal Global Biodiversity Framework, Target 11, 2022

'Encourages Parties to consider, as appropriate, nature-based solutions or ecosystem-based approaches [...] for their mitigation and adaptation action while ensuring relevant social and environmental safeguards'

UNFCCC COP27 Cover text, Section 14:48 ('Forests'), 2022

'...to work collaboratively and expeditiously to pursue [...] Scaling of finance and investments for climate and nature from all sources [...] in a synergetic, dedicated and progressive manner that ensures the promotion of co-benefits and efficient use through nature-based solutions and/or ecosystem-based approaches...'

UNFCCC COP28 Joint Statement on Climate, Nature and People, 2023

NbS has, however, so far struggled to become a key agenda item at UNFCCC COPs. While NbS was mentioned in the main cover text at COP27 for the first time, outcomes at COP28 were mainly related to carbon trading regulations and a brief mention of NbS in a Joint Statement by COP Presidencies (Box 3). The concept saw even less progress at COP29. Although NbS appears in some countries' NDCs under the Paris Agreement, advocacy groups are currently pushing for NbS to become more firmly integrated in the NDCs due for revision in 2025 (Nature4Climate, 2024). It is expected that NbS will see more attention at the forthcoming COP30 in Brazil.

The UN Convention on Biodiversity mentions NbS as options (but not requirements) for addressing targets 8 and 11 on addressing climate change impacts and restoring, maintaining and enhancing nature's contributions to society.

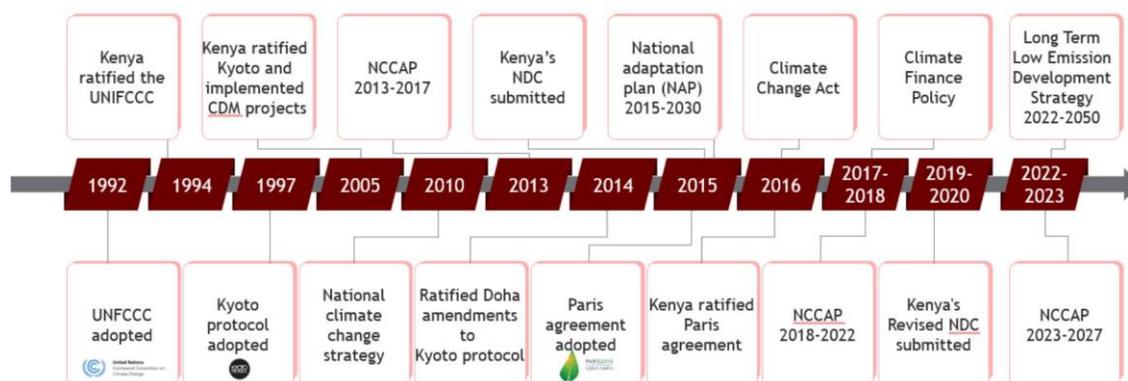
In regional terms, Nature-based Solutions are a component in the African Union's 2021–2027 Green Recovery Action Plan. They are also a feature in The Africa Carbon Markets Initiative (ACMI), a regional initiative incorporating governments, private sector and civil society launched in 2022 which aims to 'drive a dramatic increase in the production of

African carbon credits while ensuring that carbon credit revenues are transparent, equitable and create good jobs', and to promoting new concepts such as biodiversity credits (ACMI, 2022: 6).

3.2 National context

Kenya has an extensive framework of acts and policies addressing environmental issues and has been a frontrunner in several areas (Figure 1). Kenya was first in Africa to develop a Climate Change Act, and the climate change framework is well developed.

Figure 1. Key points in the development of Kenya's Climate Change Framework



Source: Hilary Korir, National Treasury, GoK.

Kenya's Nationally Determined Contribution to the Paris Agreement (NDC) views NbS as a core strategy for mitigation and adaptation. The Climate Change Act (Amendment) of 2023 introduced new guidelines for the carbon market, explicitly mentioning NbS. As of 2024 the bill also stipulates how to share NbS carbon benefits between various stakeholders. The Constitution of Kenya, 2010 and its derived Community Land Act (2016) incorporate principles of devolution, participation and social justice. The Climate Change Act (amended 2023) and its subsidiary⁵ legislation are the principal laws that guide Kenya's carbon markets and hence NbS-related activities.

The Environmental Management and Coordination Act (EMCA) 1999 (amended 2012 and 2015) and the Climate Change Act 2016 authorises the National Environmental Management Authority (NEMA) to act as the Designated National Authority (DNA), meaning that NEMA can authorise participation and approve NbS projects. Other national policy instruments, such as the Climate Change Policy, the National Climate Change Action Plans and the National Climate Change Response Strategy, provide overarching frameworks for NbS.

At Kenya's subnational level, the County Climate Change Fund (CCCF) – created by the Climate Change Act 2016 – is an instrument to finance local climate action activities at the subnational level, including NbS. The CCCF allocates a certain percentage of local government development budgets to climate measures. This allocation is so far low, averaging some 2% of budgets, and the CCCFs are still mainly donor funded. The focus is furthermore so far on adaptation. However, the CCCF is a relatively rare example of

⁵ See the Climate Change (Amendment) Act, 2023 and the Climate Change (Carbon Markets) Regulations, 2024, 21 February 2025.

institutionalised domestic resource mobilisation for devolved climate action in African countries.

BOX 4. SELECTED KEY POLICIES AND ACTS RELEVANT TO NBS IN KENYA

Climate change

- NDCs for the Paris Agreement 2015 and 2020
- Climate Change Act, original 2016 and revised 2023
- Carbon Market Regulations (Draft 2024)
- National Climate Change Action Plans 2013, 2018, 2023
- National Climate Change Response Strategy 2010
- National Adaptation Action Plan 2015–2030

Development plans

- Vision 2030 Medium Term Plans 2008, 2013, 2018, 2023

Biodiversity, environment, forestry

- National Biodiversity Strategy for period 2019–30
- Environmental Management and Coordination Act, 2012 and 2015
- National Forest Policy 2014 and 2020 Draft
- Forest Act 2016 and 2022
- National REDD+ Strategy 2021

Agriculture

- Agricultural Policy 2021
- Climate Smart Agriculture Strategy 2017

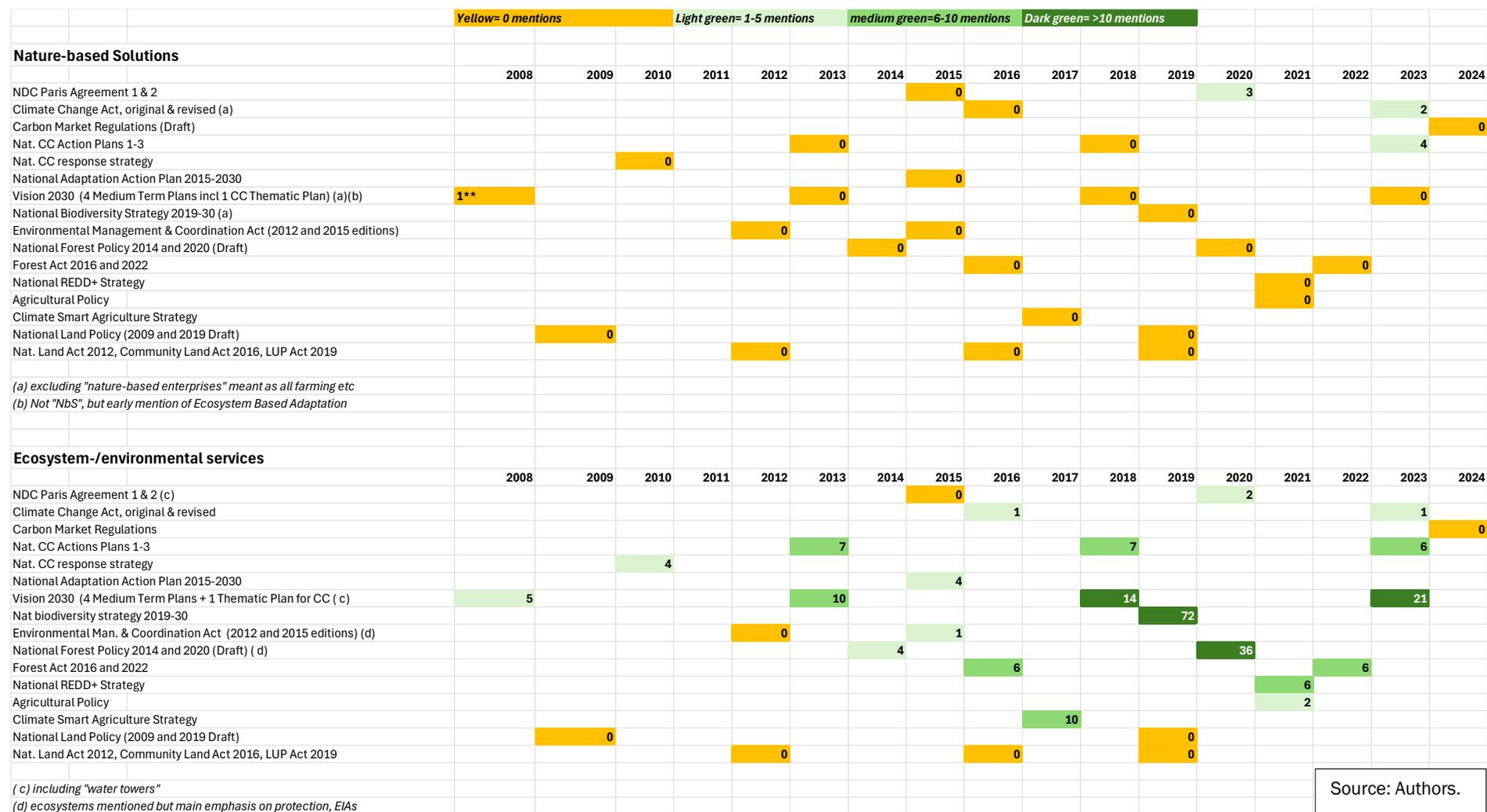
Land

- National Land Policy, 2009 and 2019 Draft
- National Land Act 2012
- Community Land Act 2016
- Physical and Land Use Planning Act 2019

3.3 Evolution of NbS in Kenya's policy and legal framework

To examine the evolution of NbS and related agendas specifically, we reviewed selected key national policies, strategies and acts related to NbS, climate change, forestry, agriculture, biodiversity and land in Kenya during the period 2008–2024. We further conducted a Word Frequency Count of 29 of these documents (including revised versions), as an indicator of when and to what extent NbS and related terms emerged in formal framework. The results can be found in Figures 2–4 and are discussed below (source of figures: Authors).

Figure 2. Word count for ‘Nature-based Solutions’ and ‘ecosystem/ environmental services’ in policies and acts



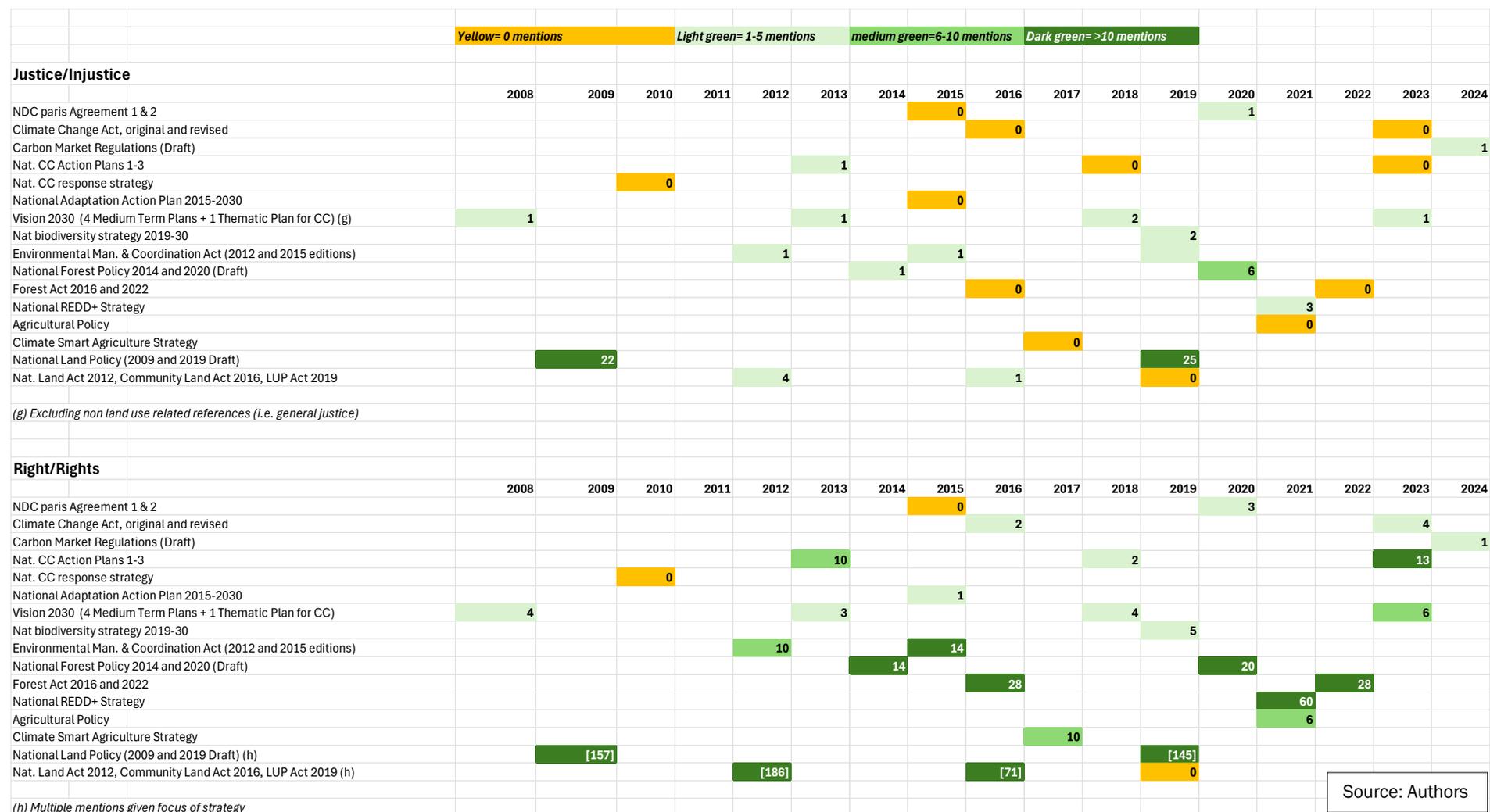
Source: Authors.

Figure 3. Word count for ‘carbon credits/markets’ and ‘REDD/REDD+’ in policies and acts

	Yellow= 0 mentions			Light green= 1-5 mentions			medium green=6-10 mentions			Dark green= >10 mentions							
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Carbon credits/markets (e)																	
NDC paris Agreement 1 & 2								0					0				
Climate Change Act, original and revised									0							33	
Carbon Market Regulations (Draft)																	104
Nat. CC Action Plans 1-3						39					9					9	
Nat. CC response strategy			19														
National Adaptation Action Plan 2015-2030								0									
Vision 2030 (4 Medium Term Plans + 1 Thematic Plan for CC)	1					6					2					1	
Nat biodiversity strategy 2019-30												0					
Environmental Man. & Coordination Act (2012 and 2015 editions)					0			0									
National Forest Policy 2014 and 2020 (Draft)							1						1				
Forest Act 2016 and 2022									0						0		
National REDD+ Strategy														20			
Agricultural Policy														0			
Climate Smart Agriculture Strategy										4							
National Land Policy (2009 and 2019 Draft)		0										0					
Nat. Land Act 2012, Community Land Act 2016, LUP Act 2019					0				0			0					
<i>(e) including "carbon trading", "-offsets", "-financing"</i>																	
REDD/REDD+																	
NDC paris Agreement 1 & 2								0					2				
Climate Change Act, original and revised									0							0	
Carbon Market Regulations (Draft)																	0
Nat. CC Action Plans 1-3						34					7					17	
Nat. CC response strategy			25														
National Adaptation Action Plan 2015-2030								0									
Vision 2030 (4 Medium Term Plans + 1 Thematic Plan for CC)	0					0					0					0	
Nat. biodiversity strategy 2019-30												0					
Environmental Man. & Coordination Act (2012 and 2015 editions)					0			0									
National Forest Policy 2014 and 2020 (Draft)							0						6				
Forest Act 2016 and 2022									0						0		
National REDD+ Strategy (f)														[343]			
Agricultural Policy														0			
Climate Smart Agriculture Strategy										2							
National Land Policy (2009 and 2019 Draft)		0										0					
Nat. Land Act 2012, Community Land Act 2016, LUP Act 2019					0				0			0					
<i>(f) multiple mentions given REDD+ is focus of strategy</i>																	

Source: Authors.

Figure 4. Word count for ‘justice/injustice’ and ‘right/rights’ in policies and acts



Source: Authors

3.4 Reference to NbS in national policies and acts

The term ‘Nature-based Solutions’ itself has only recently emerged in Kenya’s official policy framework, and to a very limited extent. As can be seen in Figure 2, the NbS concept did not feature in Kenya’s first NDC under the Paris Agreement (2015) but is mentioned in the second NDC (2020), which is the first time in the examined policy documents. The 2020 NDC discusses scaling up NbS for mitigation as a ‘priority action’ but does not specify activities. It also mentions NbS as an approach in DRR (flood risk management). Likewise, the term is not mentioned in the original 2016 Climate Act but appears in the revised 2023 Act, where it is listed as an activity under carbon markets. The 2023–2027 National Climate Change Action Plan refers to NbS as an activity to address under ‘Youth Climate Change Innovative Hubs’ and in regional collaboration.⁶ NbS is not mentioned in the Vision 2030 Plans, the Forest Policy, Forest Act, Biodiversity Policy, REDD+ strategy or the 2024 Carbon Market Regulations.

The longer-standing concepts of ‘ecosystem/environmental services’ and (in Kenya) ‘water towers’ are, however, reflected more widely in the policy framework, including in Vision 2030 Plans since 2008. The strong emphasis on ‘water towers’ is particularly notable, reflecting the political significance of these as water suppliers to cities. The concept of ecosystem services is particularly emphasised in the biodiversity strategy and forest policy, reflecting the need for these sectors to justify their relevance to society.

3.5 Carbon trading in national policies and acts

The carbon trading agenda emerged in earnest in policy documents in the early 2010s. The 2010 NCRSS identified carbon markets as an opportunity for Kenya, linking forest and catchment restoration, community poverty alleviation and biodiversity conservation. It laid out plans for national institutional development, capacity building and awareness raising on carbon markets generally and REDD+ specifically. In 2013, Kenya’s first National Climate Change Action Plan (NCCAP) followed up with a fairly extensive discussion of challenges and opportunities in carbon credits and trading, including the need to enhance access to international carbon markets and develop REDD+ activities. Also in 2013, the second Vision 2030 Medium Term Plan introduced the notion of making Kenya an African carbon trading hub:

‘Kenya will be positioned as the African Continent’s carbon credit trading hub by establishing carbon trading schemes and establishment of a regional framework for carbon trading across the East African Community and the wider African region and beyond’.

Vision 2030, Medium Term Plan 2013–2017, GoK 2013: 84

Despite this, neither Kenya’s first (2016) nor second (2020) NDC mention carbon markets/trading directly. However, the 2020 NDC does list enhancement of NbS, REDD+ and Blue Carbon PES systems as priority mitigation activities. The main emphasis on carbon markets is in climate-specific acts, policies and strategies. Neither the 2016 and 2022 Forest Acts nor the 2012 Land Act, 2016 Community Land Act and

⁶ Some policies mention development of ‘nature-based enterprises’. In some documents this refers merely to any enterprise dependent on natural resources (e.g. agriculture and forest industries), while in others it refers to development of new opportunities for enterprise development such as seaweed farming.

2019 Physical and Land Use Planning Acts mention carbon offsets/markets or REDD+. The 2021 Agricultural Policy is also silent on carbon markets. The 2017 Climate Smart Agriculture Strategy is mainly focused on adaptation and reducing emissions, although it does include an action to promote REDD+ and enhance carbon stocks, 'including rangeland management (p59).

In 2022, the carbon trading agenda received a renewed boost when President Ruto emphasised it as a policy goal.

'Kenya's next significant export will be carbon credits. This is why we call for simplified, more transparent carbon market systems that directly benefit communities and not just intermediaries'.

President Ruto speech at COP27, Sharm el Sheik, 7 November 2022

Today, Kenya has taken the lead as the country that has the most activity in the carbon market space. We intend to take that lead even further by providing us with the legislation that will enable us to do that'.

President Ruto speech at African Climate Summit, Nairobi, 4 September 2023

The renewed emphasis on carbon markets is evident in the revised 2023 Climate Act (in contrast with the original 2016 Act, which did not mention carbon markets) and is also emphasised in the 2023 NCCAP, which, in particular, highlights REDD+ actions, including forest restoration.⁷ The 2024 draft Carbon Market Regulations provided for the allocation of carbon revenues, among the first in Africa to do so. Then, regulations stipulate that 40% of earnings from projects on public and community lands must be provided to communities (25% from non-land-based projects).

3.6 Environmental justice and rights in national policies and acts

The Constitution of Kenya, 2010 and the Environmental Management and Coordination Act (EMCA) provide a strong foundation for environmental justice. The EMCA, originally adopted in 1999 (revised 2012), provides an important legal basis for environmental justice, including a grievance mechanism i.e. the National Environmental Complaints Committee. The adoption of the 2010 constitution established the right to 'a clean and healthy environment' (Article 42) as well as state obligations to manage resources sustainably and equitably Article 69) and allowing any person to enforce this right through court action (Article 22).

The term 'justice' remains only sporadically mentioned in climate policies and acts. The Vision 2030 Plans include extensive discussion of efforts to address justice *in general*, but the term is almost entirely absent in Kenya's National Climate Change Action Plans, Climate Change Act and NDCs. The term is most evident in the 2020 Draft Forest Policy, which – somewhat progressively – speaks of 'unresolved historical land injustices' and mentions intra/intergenerational equity and the principle of environmental justice. The 2024 Carbon Market Regulations provide a schedule for Community Agreements, which

⁷ The potential of carbon trading for African economies is also manifest in the 2023 African Leaders' Nairobi Declaration on Climate Change, which Kenya played a leading role in articulating.

state that agreements shall be guided by a series of principles, including ‘social justice’, ‘inclusiveness’, ‘equity’, ‘equality’ and ‘non-discrimination’.

The issue of rights is more frequently addressed, especially in the last five years. In the NDCs, NCCAPs and general Climate Acts, rights are, however, mainly mentioned as abstract principles. Mention of rights in these documents is thus mainly a reference to the 2010 constitution (which stipulated the rights of citizens to a clean and healthy environment), while direct policy actions to address these principles are less clear. The 2024 Carbon Market Regulations specify the financial rights of communities in terms of benefitting from carbon finance, but do not address land and natural resource rights. These regulations do, however, stipulate that carbon projects must have ‘Grievance Resolution Sub-Committees’ which will address complaints.

Forest sector policies and REDD+ guidelines refer more extensively to rights. The 2014 Forest Policy stipulated the need to recognise customary rights and user rights in forests, and the 2020 Forest Policy discussed community land rights and Indigenous intellectual property rights. The latter policy specified that ‘*Gvt shall clearly define the holders of legal rights to carbon rights/ REDD+ benefits*’ and ‘*put in place mechanisms for resolving conflicts between different actors in the forestry sector*’ (p40). This was carried forward in the 2021 National REDD+ Strategy developed with UNDP support as part of the REDD+ Readiness process. The strategy discusses community land rights quite extensively in its background analysis, though less so in the numerous policy actions which include ‘*clarify definitions of carbon rights and tenure rights to streamline benefit-sharing mechanisms for all stakeholders*’ (p61) with MoEF and KFD as responsible; and ‘*(d) develop land concession protocols that recognise tree tenure and carbon rights*’ (p72) through Ministry of Lands, MoEF, KEFRI and KFS. The 2022 Forest Act provides some allowance for customary forest use rights (subsistence use) and stipulates that ‘*investors in forests shall share the benefits of their investment with local communities...*’ (p31).

Land laws and policies are somewhat ambiguous on community land rights. NbS projects often have far-reaching effects on how local communities can use and access land. This makes laws and policies governing community land rights essential for land-based NbS as well as for local communities. The 2009 Land Policy was fairly progressive, discussing the need to address ‘historical injustices and grievances’ (p38) and the need to protect vulnerable groups from ‘unjust and illegal expropriation’ (p42). It aimed to address community rights in fisheries and pastoralism, including providing pastoralists with ‘flexible and negotiated cross boundary access to protected areas, water, pastures’ (p39). These quite progressive aims appeared in the lead-up to the new 2010 constitution. The 2010 constitution further established the Environment and Land Court, which is considered to have made some progress.

While the Constitution of Kenya, 2010 and EMCA remain critical pillars of the legislative framework for environmental justice, subsequent policies and acts have been more ambiguous. The 2019 Draft Land Policy retains reference to addressing colonial land injustices, but the wording on protecting vulnerable groups and pastoral access rights is toned down. Although the 2012 Land Act and 2019 Physical and Land Use Planning Acts refer extensively to land rights for obvious reasons, they do not explicitly seek to address the earlier aims of securing land rights and access for vulnerable groups and e.g. pastoralists. The 2016 Community Land Act, meanwhile, has been critiqued for

working counter to expectations by undermining customary institutions and communal land access (Hassan et al., 2023).

3.7 Media coverage

The growing emphasis on carbon trading in government policy has led to increased media coverage of the subject. The concept of Nature-based Solutions has also seen some recent coverage but remains far more limited. Table 1 illustrates this development in *The Daily Nation*, Kenya’s largest newspaper.

Table 1. Number of articles mentioning NbS and related terms in *The Daily Nation*⁸

Search word	2005–2009	2010–2014	2015–2019	2020–2024
Carbon Kenya	85	205	347	1053
Carbon Trade Kenya	17	26	31	129
Carbon Forest Kenya	11	38	63	204
‘Nature-based Solutions’	0	0	2	62
‘Nature-based Solutions’ Kenya	0	0	1	47
REDD Kenya	3	1	5	20

BOX 5. KEY TAKEAWAYS ON NBS IN KENYA’S LEGAL AND POLICY FRAMEWORK

- Kenya’s NDC asserts NbS as a key strategy for mitigation and adaptation, and the amended Climate Change Act of 2023 explicitly mentions NbS.
- However, the term ‘Nature-based Solutions’ is still very recent and not widely addressed in the wider policy and legal framework.
- The carbon trading agenda, however, is quite strongly consolidated, emerging in policy documents in the early 2010s and boosted since 2022 by the Ruto administration.
- The 2024 Carbon Regulations provide guidelines on stakeholder sharing of benefits (including 40% for communities in land-based projects).
- Kenya’s Constitution, 2010 and the Environmental Coordination and Management Act provide an important overall foundation for environmental justice, although the term ‘justice’ is only sporadically mentioned in climate- and environment-related policies and acts.
- The issue of rights is more frequently addressed, especially in the last five years. Forest sector policies and REDD+ guidelines refer extensively to rights.
- Land laws and policies are somewhat ambiguous on community land rights and indicate a shift from progressive wording in the 2010s to a more restrained approach in recent years.

⁸ Method: According to the 2023 State of Media report, the Daily Nation is Kenya’s largest newspaper, read by 35% of newspaper readers. We searched *The Daily Nation*’s online archive and recorded the number of article hits in intervals of 5 years from 2004 to 2024. Note that the count only applies to the web edition. A growing total number of online articles over the period may have influenced the results. Longer search strings are contained within shorter ones, e.g. articles featuring the words ‘Carbon Trade Kenya’ are also contained in hits for ‘Carbon Kenya’.

4. NBS PROJECT GOVERNANCE

4.1 Organisations, agencies and their roles

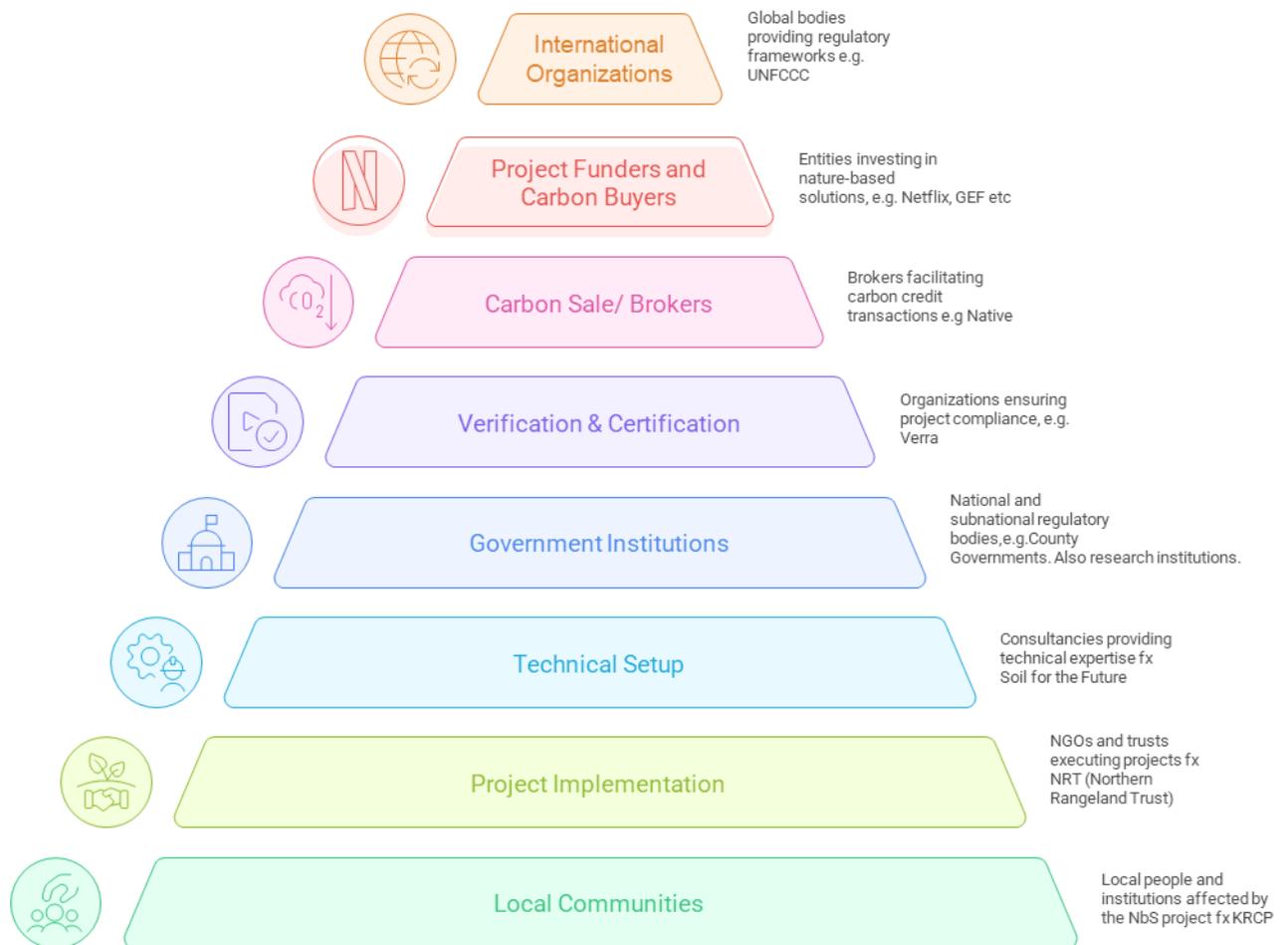
A number of interested organisations and actors at international, national and local levels are involved with NbS projects in Kenya and with the generated carbon credits. In this section, we identify, categorise and describe such organisations in the Kenyan context (Figure 5). A list of specific organisations included in the study can be seen in Table 2.

Projects taking an NbS approach span multiple sectors, including forestry, coastal and marine ecosystems, agriculture and wetlands conservation. Some of the key projects include afforestation programmes and mangrove restoration initiatives, often implemented through partnerships between government agencies, NGOs, community-based organisations and private sector actors.

International government organisations (IGO) and donors play roles at all levels. At the global level, they establish environmental standards and global commitments. At the national level in Kenya, they have long pushed for establishing NbS and carbon credit projects. At the local level, they facilitate multi-stakeholder collaboration and provide financial and technical support for NbS. For instance, UNEP has provided grants for the Mikoko Pamoja project, and the African Development Bank (AfDB) and World Bank (WB) have offered grants and loans for REDD+, sustainable agriculture and smarter land-use planning projects as well as for developing policies and improving practices.

Carbon credit buyers and investors include private companies and non-profit organisations. *Private companies* are often global and from carbon-intensive sectors, such as aviation, fossil fuel and mining, tech and streaming services, banking and finance, and luxury and consumer goods. Most have net-zero targets and sustainability goals, or seek offsets for regulatory compliance or reputational management. For instance, Netflix invests in carbon offsets as part of their ESG strategies to build goodwill with environmentally conscious customers. Regulatory requirements also contribute to motivating companies to invest in carbon offsets, e.g. in the case of Shell. *Non-profit organisations*, which comprise foundations, research institutions and sustainability-focused charities, prioritise high-impact projects focusing on conservation, research and social impact that align with their environmental or ethical profiles. They handpick projects with strong governance and credibility and may also fund or engage in studies on NbS.

Figure 5. Main actors in NbS projects financed by carbon offsets



Source: Authors.

Carbon credit brokers are companies or non-profits that specialise in connecting NbS projects with carbon credit buyers on the carbon market. Some brokers sell NbS-generated carbon credits targeting individuals and small businesses, while others focus on corporate partnerships and institutional transactions. Brokers like Wildlife Works and Stand for Trees facilitate sales through other broker organisations. They emphasize the credibility of traded carbon credits, achieved through the transparency of their operations and third-party verification. They also highlight social and environmental co-benefits of carbon trading, showing how they support local communities, improve their livelihoods, and contribute to sustainable development and carbon offsetting.

Carbon verification agencies, such as Verra, Gold Standard Foundation, Plan Vivo and Voluntary Carbon Markets Integrity Initiative, validate that NbS projects meet environmental and social standards, making them eligible for carbon credit markets, and sustainability programmes. They also evaluate co-benefits like biodiversity conservation, community engagement and socioeconomic improvements. They establish guidelines, assess and certify carbon sequestration, biodiversity conservation and climate adaptation. Additionally, they engage in capacity building, knowledge sharing and governance strengthening, assisting NbS developers align with best practices, enhance monitoring and reporting systems and improve accountability in benefit-sharing

mechanisms. Each verification agency provides different certification methodologies and sustainability criteria. As administrator of the global Verified Carbon Standard (VCS), Verra is one of the dominant verification programmes and administers most of the major carbon credit NbS projects in Kenya.

National and local government agencies (ministries and government research institutions). The ministries formulate policies, create general guidelines for carbon projects, and regulate land use and management of forests and marine ecosystems. For example, the Ministry of Environment and Forestry developed the Climate Change (Carbon Markets) Regulation 2024, and the Kenya Forest Service (KFS) collaborates with communities on forest management and carbon trading. The ministries, moreover, oversees that NbS projects align with national policies and international commitments, e.g. the United Nations Framework Convention for Climate Change (UNFCCC) and the Convention on Biological Diversity (CBD). The government research institutions provide data and expertise, collaborate with international partners and are sometimes involved in NbS implementation. For instance, the Kenya Marine and Fisheries Institute engage with the Mikoko Pamoja. National agencies also engage in capacity building, community engagement support and partnership coordination. Furthermore, Kenya's devolution policy is significant compared to many other countries, and local governments have real decision-making power and funds, and are important local actors in some project sites.

Consultancies and independent research institutes conduct work for or with the carbon credit industry, whether through policy development, project facilitation, scientific research or market infrastructure. With varying focus (policy, finance, research, project development), their claimed aim is to increase the effectiveness and integrity of carbon markets through improved standards and credibility. They claim to viewing carbon markets as not just about emissions reductions, but also about sustainable development and co-benefits. These organisations maintain that they act as key intermediaries helping align stakeholders to grow carbon markets. While operating internationally, each organisation has thematic specialisations, such as African carbon markets, financial structuring, forests and agroforestry, or devising measuring tools for soil carbon worldwide.

NGOs and community-based organisations play key roles in NbS management, implementation, capacity building and financial structuring. The implementing NGOs make use of diverse funding models. Some rely heavily on carbon credits, while others blend donor funding, philanthropy and PES mechanism with incomes from carbon credits. They also specialise in various ecosystems, such as forests or rangelands, while others focus on marine and water-based NbS. Some NGOs, moreover, engage in policy advocacy, generate research and shape policies in collaboration with government, private sector actors and communities.

Table 2. Selected actors working with or supporting carbon credit NbS projects in Kenya⁹

Type and name of actor	Role of the actor
International Government Organisations and donors	
African Development Bank	Multilateral development finance institution
Global Climate Fund	Donor
Global Environment Facility	Donor
The Forest Carbon Partnership Facility	Global Partnership admin. by World Bank
UNDP	IGO
UNESCO	IGO
UNEP	IGO
World Bank BioCarbon Fund	Multilateral fund
Carbon credit buyers and investors	
Air France-KLM	Carbon buyer
Apple	Carbon buyer
BHP	Carbon buyer
Delta Air Lines	Carbon buyer
Kering	Carbon buyer
Levin Sources	Carbon buyer
Nedbank	Carbon buyer
Nespresso	Carbon buyer
Netflix	Carbon buyer
Pelorus Foundation	Carbon buyer, charity, consultancies
Shell	Carbon buyer
Zenlen	Carbon buyer
Carbon credit brokers	
ClimateCare and Natural Capital Partners/ Climate Impact Partners	Broker
Climate Trade	Broker
Cool Effect	Broker/Non-profit platform
Everland	Broker
Native	Broker
Riyadh Voluntary Carbon Market Company (RVCMC)	Broker
Stand for Trees	Broker
Suni Smart Energy	Broker
Wildlife Works	Broker
Carbon verification agencies	
Gold Standard Foundation	Verification
Plan Vivo	Certification, charity
Verra	Verification/Standards
National and local government agencies	
Ministry of Environment, Climate Change and Forestry	National Ministry
Ministry of Tourism and Wildlife	National Ministry
Ministry of Agriculture and Livestock Development	National Ministry
Ministry of Lands and Physical Planning	National Ministry
National Environmental Management Authority (NEMA)	National government agency

⁹ The list is not exhaustive.

Kenya Forest Service (KFS)	National government agency
Kenya Wildlife Services (KWS)	National government agency
Kenya Forestry Research Institute (KEFRI)	National research institute
Kenya Marine and Fisheries Research Institute	National research institute
County Governments	Local governments in project areas
Community Forest Associations (CFA)	Community organisations under Kenya Forest Service
Consultancies and independent research institutes	
Africa Carbon Markets Initiative (ACMI)	Consultancy
Catona	Consultancy
Center for International Forestry Research and World Agroforestry	Research institute
Soils for the Future Africa	Soil science consultancy, project developer and manager
South Pole	Asset developer and consultancy
World Resources Institute	Think tank
NGOs and community-based organisations	
ACES	Charity and broker
CORDIO East Africa	NGO
Eden People + Planet	NGO
Northern Rangelands Trust	NGO
The Maasai Wilderness Conservation Trust (MWCT)	CBO
The Nature Conservancy	INGO
Upper Tana Nairobi Water Fund	Charitable trust/ NGO
WWF Kenya	NGO
Nature-based climate solutions projects	
Alliance for Restoration of Forest Landscapes and Ecosystems in Africa (AREECA) (project)	Project
Chyulu Hills REDD+ project	Project
Lamu County Mangrove Restoration Initiative	Project
Kajiado Rangelands Carbon Project	Project
Kenya Agricultural Carbon Project	Project
Lamu Tana Seascape (upcoming project)	Project
Mastercard Priceless Planet Coalition	Initiative by Mastercard
Mikoko Pamoja	Project
The International Small Group and Tree Planting Programme (TIST)	Project and company
The Livelihoods Mt Elgon Project	Project
The Northern Kenya Carbon Project (NKCP)	Project
The Wildlife Works Kasigau Corridor	Project
Vanga Blue Forest	Project

Source: Authors

4.2 Standards and legal requirements for project governance

IUCN Global Standard for NbS

International standards for NbS projects include the IUCN Global Standard, which establishes criteria and indicators that should be met by NbS projects (IUCN, 2020a, 2020b, 2025). The Global Standard – revised in 2025 – includes criteria on inclusive governance and community land and resource rights (Box 5). It also refers to the Free, Prior and Informed Consent (FPIC) framework developed by the UN Convention on the Rights of Indigenous People. The standard is voluntary and there are currently no enforceable sanctions in place. At the time of writing, the Global Standard has not been adopted by major carbon credit verifiers such as Verra.

So far, few projects in Kenya – whether carbon credit financed or not – have adopted the (voluntary) IUCN Global Standard for NbS. While the standard is still recent, feedback from carbon market investors and implementing actors suggest that they feel a need to prioritise in the number of standards they deal with, and that they focus on complying with existing verification standards on the voluntary markets. One exception in Kenya is the WWF Triple Benefits project which has been specifically designed to accommodate the IUCN Global Standard.

Voluntary carbon market standards and requirements

NbS projects financed by carbon credits must comply with international standards pertaining to either the compliance markets (trading related to mandatory caps under international agreements) or the voluntary markets (voluntary trading).

So far, Kenya's NbS-related carbon credit projects are almost exclusively focused on the voluntary market (see Section 5). The most widespread international standard on the voluntary market is the Verified Carbon Standard (VCS), originally established in 2007 and now administered by Verra. Most major Kenyan carbon credit projects related to NbS apply the VCS standard.

The VCS standard includes a variety of qualifying and methodological criteria that must be met by projects (Box 6). Criteria related to governance and rights include subsections on:

- Stakeholder engagement and consultation, including identification of stakeholders and their tenure/access rights, and stakeholder consultation.
- Free, Prior and Informed Consent (FPIC), including on project impacts on property rights.
- Public comments, including on project design.
- Safeguards, including 'no net harm' principle, stakeholder rights, respect for human rights and equity, property rights.

BOX 6. IUCN GLOBAL STANDARD FOR NATURE-BASED SOLUTIONS

Criteria:

1. NbS effectively address societal challenges,
2. NbS incorporate an ecological, economic, social and cultural systems perspective.
3. NbS result in positive change in the state of biodiversity and enhanced ecosystem integrity, including connectivity.
4. NbS are financially feasible and economically justified.
5. NbS are based on inclusive, transparent and empowering governance processes.
6. NbS seek to equitably reconcile the achievement of their primary goal(s) with any intended and unintended impacts on the continued provision of multiple benefits.
7. NbS are managed adaptively, based on evidence.
8. NbS contribute to the enhancement of the enabling conditions for their implementation, sustainability and mainstreaming.

Indicators for criterion 5:

5.1 Stakeholders, rights-holders and Indigenous Peoples who are directly and indirectly affected by the NbS have been identified and are invited to fully and effectively participate in all processes.

5.2 A defined and fully agreed upon grievance and conflict resolution mechanism is available, accessible and implemented.

5.3 NbS are based on inclusive participation, mutual respect and equality, regardless of gender, age, ethnicity or social status.

5.4 Decision-making processes document and respond to the rights and interests of affected stakeholders, rights-holders, Indigenous Peoples and local communities.

5.5 (Optional) Where the scale of the NbS extends beyond jurisdictional boundaries, mechanisms are established to enable joint decision making among stakeholders and rights-holders in the affected jurisdictions.

Indicators for criterion 6:

6.1 Safeguards and associated corrective actions are established through a transparent, inclusive and participatory process to address the intended and unintended negative social or environmental impacts of the NbS.

6.2 Safeguards and corrective actions are documented, available, accessible to affected stakeholders and rights-holders, and implemented.

6.3 Safeguards and corrective actions are periodically reviewed to ensure that they have been fully implemented, proactively address conflicts and remain relevant

Source: <https://inbs.iucn.org/>

BOX 7. VERIFIED CARBON STANDARD – EXTRACTS ON PROPERTY RIGHTS

Stakeholder assessment

3.18.1 (2) Identification of any legal or customary tenure/access rights to territories and resources, including collective and/or conflicting rights, held by stakeholders.

3.18.1. (6) [Identification of] The location of stakeholders, Indigenous Peoples (IPs), local communities (LCs), customary rights-holders, and areas outside the project area that are predicted to be impacted by the project.

3.18.1 (7) [Identification of] The location of territories and resources which stakeholders own or to which they have customary access.

FPIC

3.18.8 The project may affect property rights only if free, prior and informed consent is obtained from those concerned, including IPs, LCs, and customary rights-holders, and a transparent agreement is reached that includes provisions for just and fair compensation. In the event there are any ongoing or unresolved conflicts over property rights, usage or resources, the project shall undertake no activity that could exacerbate the conflict or influence the outcome of an unresolved dispute [...].

Safeguards

3.19.17 The project proponent shall identify IPs, LCs and customary rights-holders as set out in Section 3.18.1 above, and recognise, respect and promote the protection of the rights of said groups in line with applicable international human rights law, and the United Nations Declaration on the Rights of Indigenous People and ILO Convention 169 on Indigenous and Tribal Peoples, in project design and implementation.

Property rights

3.19.19 The project proponent shall recognise, respect and support IPs', LCs', and customary rights-holders' property rights and where feasible, take measures to help secure rights.

3.19.20 The project shall not encroach on private, stakeholder or government property or relocate people off their lands without prior consent and appropriate compensation.

3.19.21 The project shall not lead to forced physical or economic displacement.

3.19.22 Where the project activity impacts property rights, usage or resources, the project shall include a benefit-sharing agreement between affected stakeholder groups and the project proponent. Such an agreement shall be: 1) Appropriate to the local context; 2) Consistent with applicable national rules and regulations, and international human rights laws and standards; 3) Consistent with customary rights, to the maximum extent feasible; 4) Agreed upon by IPs, LCs, and legitimate customary rights-holders; 5) Shared in a culturally appropriate manner.

3.19.23 IPs, LCs and customary rights-holders shall have access to the benefit-sharing agreement.

Source: verra.org/wp-content/uploads/2024/04/VCS-Standard-v4.7-FINAL-4.15.24.pdf

BOX 8. CLIMATE, COMMUNITY AND BIODIVERSITY STANDARD – EXTRACTS ON STAKEHOLDER ENGAGEMENT

Access to information

- Describe how full project documentation has been made accessible to communities and other stakeholders, how summary project documentation [...] has been actively disseminated to communities [...] and how widely publicised information meetings have been held with communities and other stakeholders.
- Explain how relevant and adequate information about potential costs, risks and benefits to communities has been provided to them in a form they understand and in a timely manner prior to any decision they may be asked to make with respect to participation in the project.

Consultation

- Describe how communities including all the community groups and other stakeholders have influenced project design and implementation through effective consultation, particularly with a view to optimising community and other stakeholder benefits, respecting local customs, values and institutions and maintaining high conservation values.
- Project proponents must document consultations and indicate if and how the project design and implementation has been revised based on such input. A plan must be developed and implemented to continue communication and consultation [...]
- Demonstrate that all consultations and participatory processes have been undertaken directly with communities and other stakeholders or through their legitimate representatives [...]

Participation in decision making and implementation

- Describe the measures needed and taken to enable effective participation, as appropriate, of all communities, including all the community groups that want and need to be involved in project design, implementation, monitoring and evaluation throughout the project lifetime, and describe how they have been implemented in a culturally appropriate and gender sensitive manner.

Feedback and grievance redress

- Demonstrate that a clear grievance redress procedure has been formalised to address disputes with communities and other stakeholders that may arise during project planning, implementation and evaluation with respect but not limited to, free, prior and informed consent, rights to lands, territories and resources, benefit-sharing and participation.
- The project shall include a process for receiving, hearing, responding to and attempting to resolve grievances within a reasonable time period. The feedback and grievance redress procedure shall take into account traditional methods that communities and other stakeholders use to resolve conflicts.

Source: verra.org/wp-content/uploads/2024/07/CCB-Standards-v3.1_ENG.pdf

Related standards include the Jurisdictional and Nested REDD+ Framework, developed by Verra in 2012, and the Climate Community and Biodiversity Standards (CBB, see Box 8), which was developed by CARE, The Nature Conservancy, the Wildlife Conservation Society, Conservation International and the Rainforest Alliance in 2004 and administered by Verra since 2014. Projects may sign up to these standards in addition to the VCS, incurring further criteria to be met.

It is notable that all major verification standards and agencies applied by carbon-financed NbS projects originate outside the African continent, and that collective guidelines and principles for price-setting are so far lacking – despite some AU efforts to address this.

4.3 Kenyan legal requirements

All NbS projects necessarily involve a project proponent and local communities among a range of other actors and stakeholders. The NbS project proponent is the person or legal entity responsible for developing the project and running it. The developer designs, implements, monitors and evaluates or audits the project (thus taking charge for all project controls), may own the carbon credits generated by the project, and takes responsibility for meeting all legal obligations relating to the project. Under Kenya's Climate Change (Carbon Market) Regulations 2024, an NbS project proponent is required to demonstrate that they can competently manage the project and comply with set requirements¹⁰ besides providing proof of the right to undertake the project and stake a claim on the credits to be generated.

Once an NbS project owner has finalised the ownership arrangements for the project, they are required to register the project with the government of Kenya. For an NbS project proponent to get requisite permits and licenses, Kenya requires that the NbS project proponent meet all existing national policies as well as adhere to international obligations to which Kenya is a signatory. Counties may, in some cases, have subnational requirements that also apply. The proponent must also check with existing laws to ensure that they are allowed¹¹ (have a legal right) to undertake the proposed activity. Finally, NbS projects take place on lands where individuals or communities may already have registered interests. Kenyan law requires that the proponent must recognise such interest holders, get their consent for any proposed NbS projects and enter a Community Development Agreement (CDA) with them.

Kenyan laws also require an NbS project proponent to undertake feasibility and viability studies, consider all possible options (including reducing or eliminating inherent risks) and get all the necessary regulatory approvals. The project is required to have a governance model that should explicitly state who owns the project, how decisions are made on a day-to-day basis, who takes the risks, how benefits are shared, how disputes are resolved, how project terminations may be done, and how changes to the project's established rules may be made.

¹⁰ This may include requirements that a project be new (must not have already started) and ensures that the carbon sequestered or avoided is additional and could not exist without the project.

¹¹ For example, different land title (freehold, leasehold, public, communal) holders may, by law, be allowed to carry out some activities on the land but forbidden to do others. Communal title holders, for instance, may not be allowed to erect fences while freehold title holders may not be permitted to plant trees along boundary lines. Legal right for the NbS project proponent may differ depending on existing tenure, the land interest of the proponent (e.g. carbon project developer, lessee), type of activity (planting trees, forest regeneration, conservation, grazing, fire management) the proponent wants to undertake.

Implementing an NbS project on a parcel of land places a legal responsibility on the landowner(s) with respect to what they can or cannot do on the land. NbS projects are required to carry out engagement sessions with potential project participant communities to inform them about the project, allow them to ask questions and inform them about the obligations of all actors and stakeholders, including project monitoring, reporting, record keeping, as well as periodic auditing and any corrective actions. Communities must also be informed how long the project will last, how the project will generate credits, who will own the credits, and what they stand to benefit in terms of monetary payments, environmental and economic improvements or other corporate social responsibility benefits often called co-benefits.¹²

There can also be implications for NbS projects relating to agreements on the sale of carbon credits.¹³ For sequestration projects, sales agreements may oblige the landowners to plant trees or maintain forestlands and pasturelands for a particular period of time (usually longer than the carbon project period)¹⁴ to guarantee that sequestration of carbon continues to happen beyond the project period. It must also be known to credit earners that a small percentage of credits may be withheld to ensure against the risk that the carbon stored may be released back into the atmosphere due to an unforeseen event.¹⁵ In practice, parties to a carbon project must meet their obligations, and if they don't, penalties may apply.

While the proponent must demonstrate¹⁶ the legal right to own the carbon project, members from participating communities must demonstrate that they are the eligible landowners and hence have a right to consent to the carbon project before the project can claim any credits. The free, prior and informed consent (FPIC) framework developed by the UN Convention on the Rights of Indigenous Peoples should inform best practices for NbS project proponents who seek consent from Indigenous people.

The above requirements, in principle, provide a relatively thorough national framework for NbS governance in Kenya. However, the nature of NbS project governance in practice – and associated outcomes on the ground – cannot be predicted solely on this basis. It also depends on several other critical factors, including whether actors pursuing NbS projects are fully informed about existing policy, legal and institutional arrangements in the project environment; how they interpret these requirements; how they accommodate and navigate them in practice; and how other actors with different perceptions and interests engage them.

Moreover, aside from legal requirements, project implementers may select different project governance models, which also determine how the project is managed, with all rights and obligations considered. There are several such NbS project governance

¹² Co-benefits are additional (to emission reduction or offsets, i.e. carbon credits) environmental, economic, social and cultural benefits that a credit seller or buyer is willing to pay for, such as increased biodiversity and better wildlife conservation, protection of cultural sites, creation of employment opportunities, educational and training opportunities, opportunities for partnership and building stronger communities due to increased revenue flows and improved connectivity due to better community infrastructure.

¹³ For example, sale agreements may state that a certain number of carbon credits should be generated by a certain time.

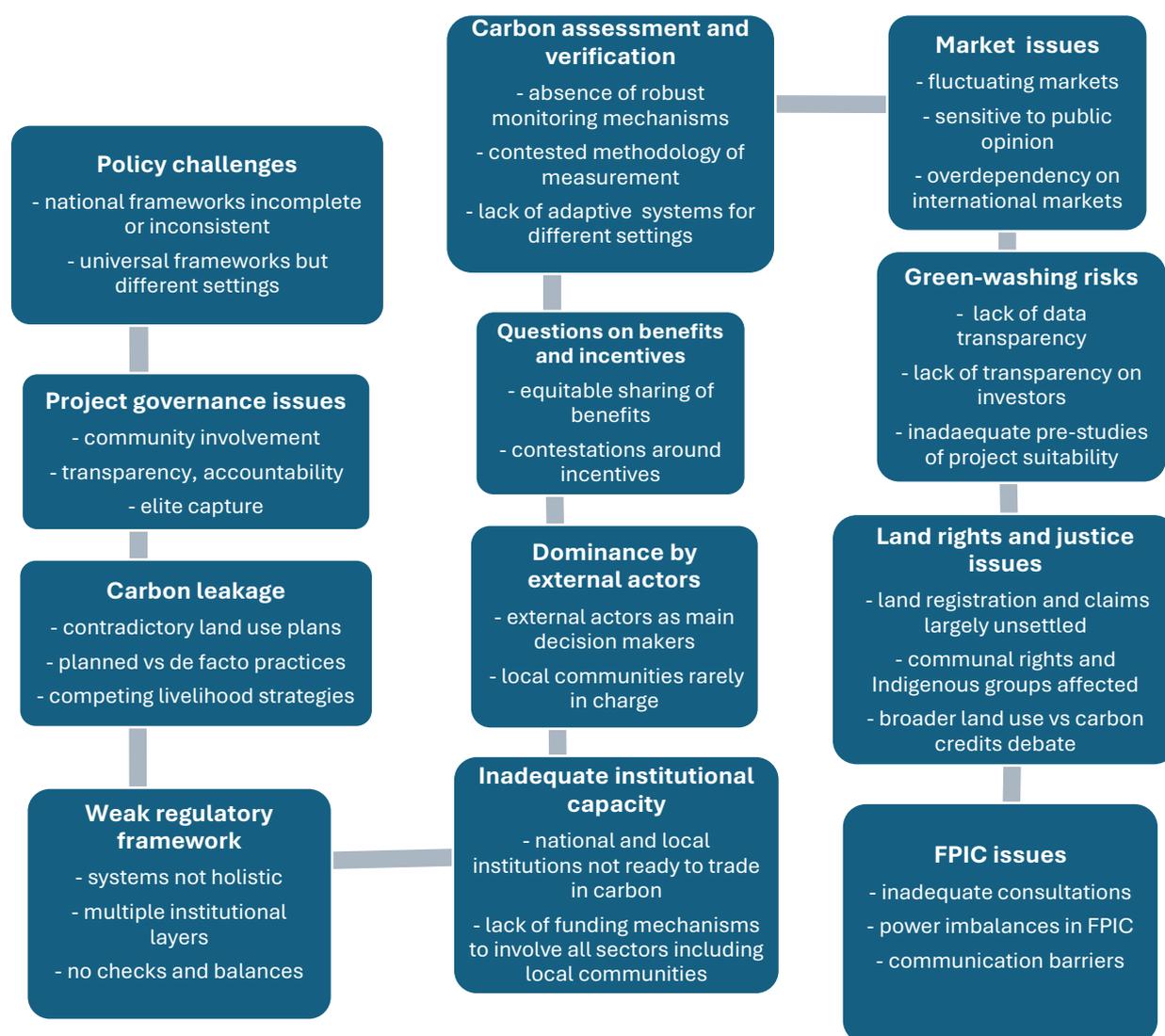
¹⁴ For example, a sequestration carbon crediting period may have been designed to last 30 years. This means that the period during which landowners (for example pastoralists) will earn credits is 30 years. However, agreements may oblige the pastoralists to maintain the land together with its vegetation for a period of 50 years. After the 30-year crediting period is over, the landowners would stop earning credits but are still legally obligated to maintain the lands as stated in the agreements.

¹⁵ If a forest or grassland is destroyed by a fire, for example, the project proponent must take action to let the carbon stored recover.

¹⁶ The proponent can demonstrate this right by proving that they have a right to the land by virtue of being lessees, freeholders or other legal right to the land.

models, including (i) the proponent as a lessee or buyer can acquire possession of land and hence register a carbon project on it; (ii) a proponent can establish a body corporate to represent land owners and establish an NbS project on the land; (iii) landowners, as individuals or a group, can register a project on their lands. There is also (iv) the option of setting up a business company to manage the project on behalf of the landowners or (v) letting a third party own, manage and take the risks and costs of the project under well-negotiated contract terms. Preference for one governance model over others and the way the model is implemented can in practice have a major impact on the outcome of NbS projects.

Figure 6. Schematic overview of NbS project challenges identified in the literature



Source: Authors.

4.4 Challenges of NbS projects in Kenya

A review of recent literature on NbS projects in Kenya highlighted the different challenges and shortcomings faced by some NbS projects, and the tensions that often emerge in the process (Downing and Olago, 2024). In principle, standards for carbon

projects are quite well developed, and legal frameworks are increasingly in place. Nevertheless, NbS projects continue to face challenges and tensions during implementation as they become enmeshed in historical contestations over land and conservation, prioritise some agendas over others or lack capacity and local knowledge (see e.g. Bersaglio and Cleaver, 2018; Cockerill and Hagerman, 2020; Muok et al., 2021). Figure 6 summarises common issues and challenges found in the literature in this respect.

These issues correspond to findings on NbS challenges elsewhere (Gravesen and Funder 2021), and to broader questions highlighted in research on connections between community rights and resilience (Hassan et al., 2023; Rotich et al., 2025; Wachira et al., 2024). While NbS thus continues to evolve in Kenya, it also faces long-standing issues related to land questions, power struggles, conservation priorities and contestations over who controls the NbS processes and benefits (Downing and Olago 2024).

BOX 9. KEY TAKEAWAYS ON NBS PROJECT GOVERNANCE

- A diverse variety of actors take part in shaping NbS governance in Kenya, including NGOs, government agencies, international donors, research institutes, carbon brokers, verification bodies and local communities. Understanding how NbS governance is shaped requires analysis beyond formal frameworks and at multiple levels to understand interactions between the different actors in practice.
- Kenya has an evolving but already advanced legal framework for NbS-related carbon projects, but its implementation in practice is still ongoing and outcomes on the ground therefore remain to be seen.
- Meanwhile, most current NbS projects funded by carbon credits have been developed to comply with standards in the international voluntary carbon markets, such as those under Verra. These are relatively well-developed in terms of community inclusion and engagement, but their interpretation and implementation varies in practice and are under-studied. There is a need for cross-project analysis to better understand differences.
- Existing literature on NbS projects in Kenya highlights a variety of challenges related to land rights, benefit sharing and inclusion. Less is known about the ways different project actors seek to address these well-known challenges, and what the outcomes are.

5. KENYA'S NBS FINANCE LANDSCAPE

5.1 Types of NbS finance

NbS financing can take a variety of forms:

Public finance

- Domestic financing from national budgets and public financial instruments such as green bonds.
- International finance from bilateral and multilateral sources (e.g. the global climate funds and development banks).
- Blended finance schemes. These combine public and private finance. E.g. public funding is put forward to catalyse private funding by reducing investment risks.

Private finance

- Philanthropic financing. This often attracts attention but is low overall at just 2% of global climate finance for mitigation (in 2023, philanthropic funding to forest conservation in Africa totalled just USD 22 million).
- Venture capital, equity, commercial loans etc. Currently, this is quite limited for NbS in Africa.
- Risk mitigation finance. Some industries are investing in NbS to protect their resource base, e.g. in the timber and coffee industries, or pilot NbS-specific technologies, e.g. in the water sector. Still mainly on an experimental basis.

Carbon markets

- Compliance markets, i.e. mandatory carbon credit trading under national, regional or international regimes such as the Paris Agreement. In compliance schemes, companies and governments have a cap on emissions, which can be offset via the compliance market. The now-terminated Kyoto Protocol emphasised energy, while the current UN scheme under Article 6 of the Paris Agreement is under development.
- Voluntary carbon markets, in which individual projects sell credits to businesses, NGOs, governments and individuals outside the compliance markets on a voluntary basis. There is no centralised voluntary carbon market, but a variety of verifying programmes, including Verra (widespread) and Gold Standard (developed by WWF).

At the time of writing, the main sources of financing for Nature-based Climate Solutions in Kenya are public international, multilateral and bilateral finance,¹⁷ and the voluntary carbon markets.

In the following, we provide an overview of these, with a particular emphasis on the voluntary carbon market financing, which has not been explored much in the Kenyan

¹⁷ Including philanthropic financing as this is grouped with international finance in OECD databases.

context and is a key aspect of several of the projects studied under the JUCAN research programme.

5.2 Public international climate finance to Kenya

Public international climate finance to Africa continues to increase (Figure 7) but falls far short of the estimated needs to address mitigation and adaptation in NDCs (UNDP, 2024).

Figure 7. International public and philanthropic climate finance mobilised in Africa 2011-21

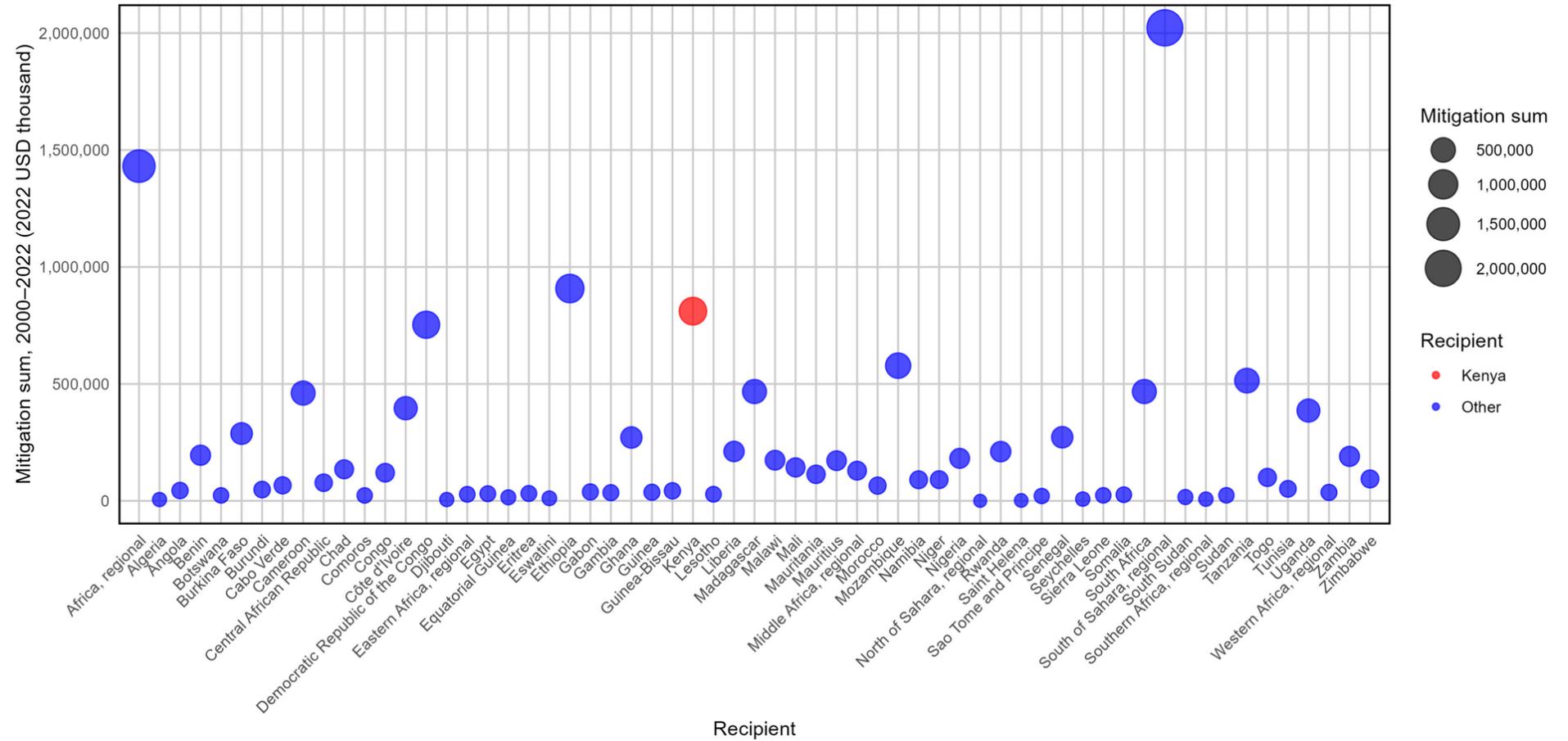


Source: (UNDP, 2024), based on OECD data.

Figure 8 focuses specifically on mitigation finance and shows that Kenya is among the highest recipients of public international climate mitigation finance in Africa, only surpassed by Ethiopia as an individual country, and by continent-wide/regional projects.¹⁸ In total, Kenya has received development commitments of 811,184 thousand USD in 2022 dollars over the period 2002–2022.

¹⁸ Figure 8 method: We used the CRDF-RP-2000-2022 data downloaded from <https://webfs.oecd.org/climate/RecipientPerspective/> and focused on recipients on the African continent. We also excluded observations where the mitigation objectives applying to the Rio market had the status 'Not targeted/Not screened'. We included the sectors 'agriculture, forestry, fishing', 'general environment protection' and 'other multisector' and selected the sub-sectors: 'forestry policy and administrative management', 'forestry development', 'forestry education/training', 'forestry services', 'environmental policy and administrative management', 'biodiversity', 'site preservation', 'environmental education/training', 'environmental research', 'rural development', 'rural land policy and management' as relevant to the theme carbon financing and Nature-based Solutions based on the description of the OECS DAC codes (<https://web-archiver.oecd.org/temp/2024-06-19/57753-dacandcrscodelists.htm>). Hence, we excluded forestry development and harvesting-related forestry projects. We summed across years and present mitigation-related development finance commitment in 2022 nominal USD).

Figure 8. Mitigation finance received by African countries 2002–2022



Source: Authors.

5.3 The voluntary carbon market and Kenya's position

Globally, carbon credit markets have fluctuated in recent years. In 2021, there was a sharp rise in demand on both compliance and voluntary markets as advances were made in UNFCCC Article 6 negotiations. This was, however, followed by a levelling out, thought at least in part to be driven by media stories of greenwashing and concerns over reputational risk among buyers.

In most African countries, the voluntary markets are currently the main source of carbon credits. However, this may change in the coming years as compliance markets under the Paris Agreement develop further.

Within the international voluntary markets, the share of credit issuances related to NbS has grown. Indeed, most data sources show that, if credits classified as 'REDD+' and 'nature restoration' are combined, they have now overtaken credits issued from renewable energy projects, as seen in Figure 9.

Figure 10 shows how, for several years, Kenya has ranked in the top ten countries that issue NbS carbon credits. The top ten group of countries issue some 90% of all credits globally (Climate_Focus, 2025).

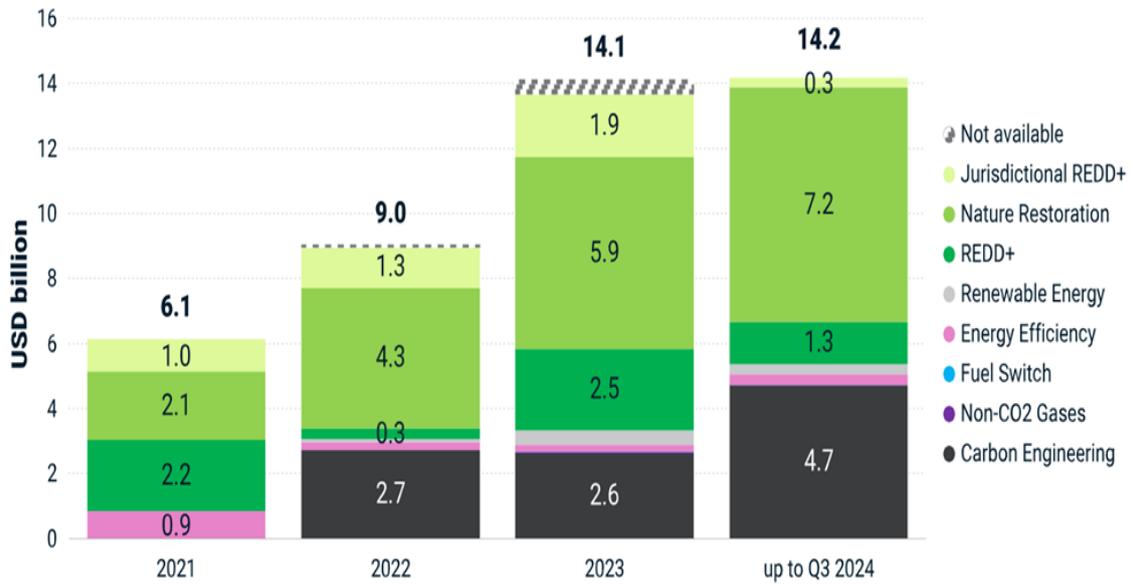
Figure 11 shows total carbon credit issuances within the African region 1996–2024. Kenya has issued the second most credits after the DRC. In total, Kenya issued 35,994,692 credits in the period. One credit is equal to 1 ton of CO₂.

As seen in Figure 12, the first voluntary market credits in Kenya were issued in 2006 and increased steadily, peaking in 2014 and 2016 before reaching a high in 2020. From there, the credits issued declined to 2022. According to the data used, no credits were issued in 2023, but the data may be incomplete for 2023. Credits retired increased over the period before topping in 2023, whereas credits remaining roughly follow the same pattern as credits issued. Oddly, the remaining credits were negative in 2015. Trends are significantly positive for all three measures, but mostly for retired credits.

Figure 13 shows that of the almost 36 million voluntary market credits issued in Kenya during 2006–2023, 53% were retired (i.e. used) and 47% remain.

Figure 14 illustrates that the Northern Rangelands Carbon Project and Chyulu Hills REDD+ Project are the projects in Kenya that issued the second and third most credits after the Kasigau Corridor REDD Project, respectively. The Northern Rangerands Project issued 6,763,174 credits, and the Chyulu Hills REDD+ Project issued 5,172,697 credits.

Figure 9. Annual global voluntary carbon-credit project capital expenditure by project type¹⁹



Source: (MSCI, 2025).

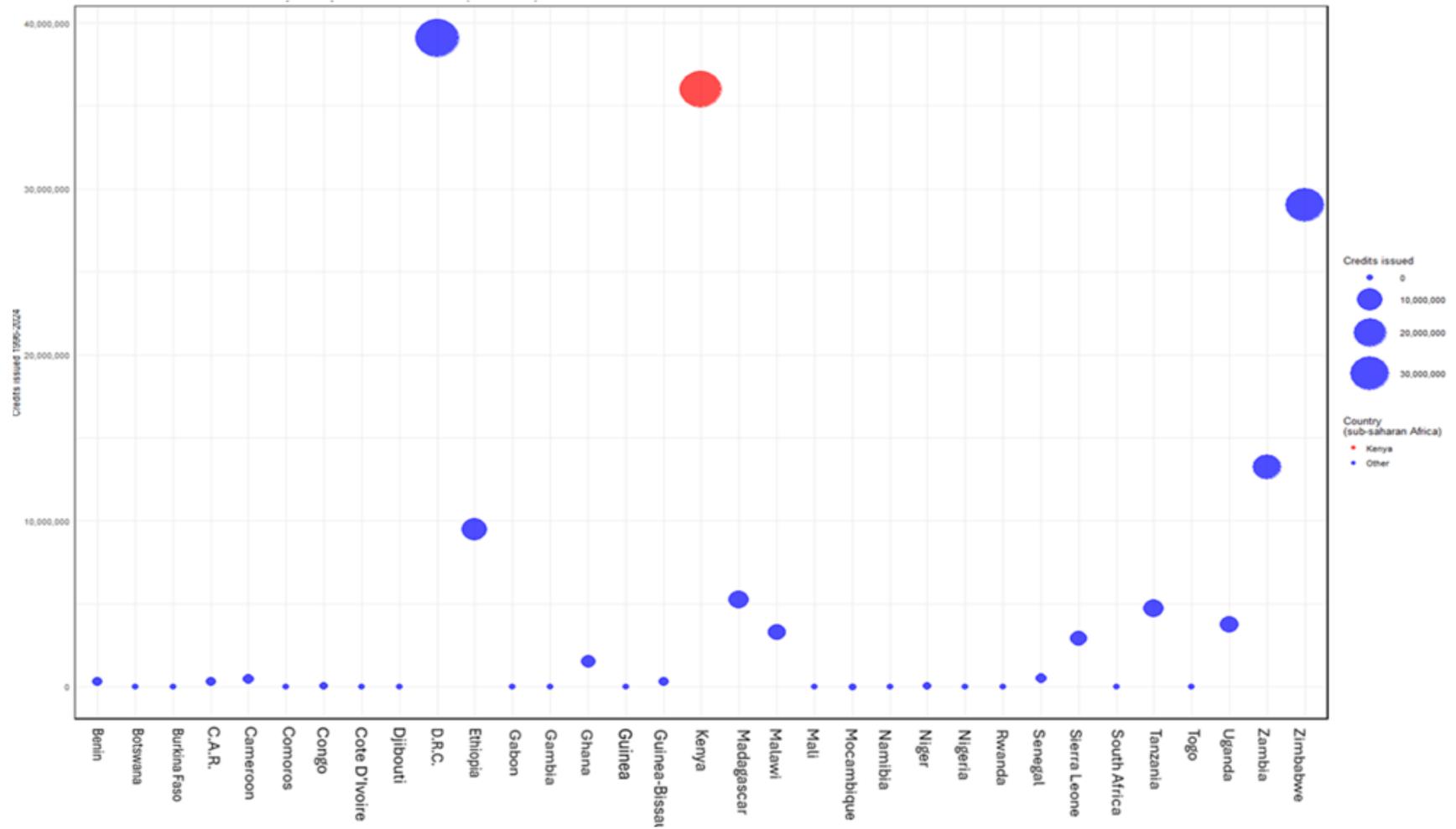
Figure 10. Top ten suppliers of NbS credits of voluntary market in 2024



Source: Climate_Focus 2025.

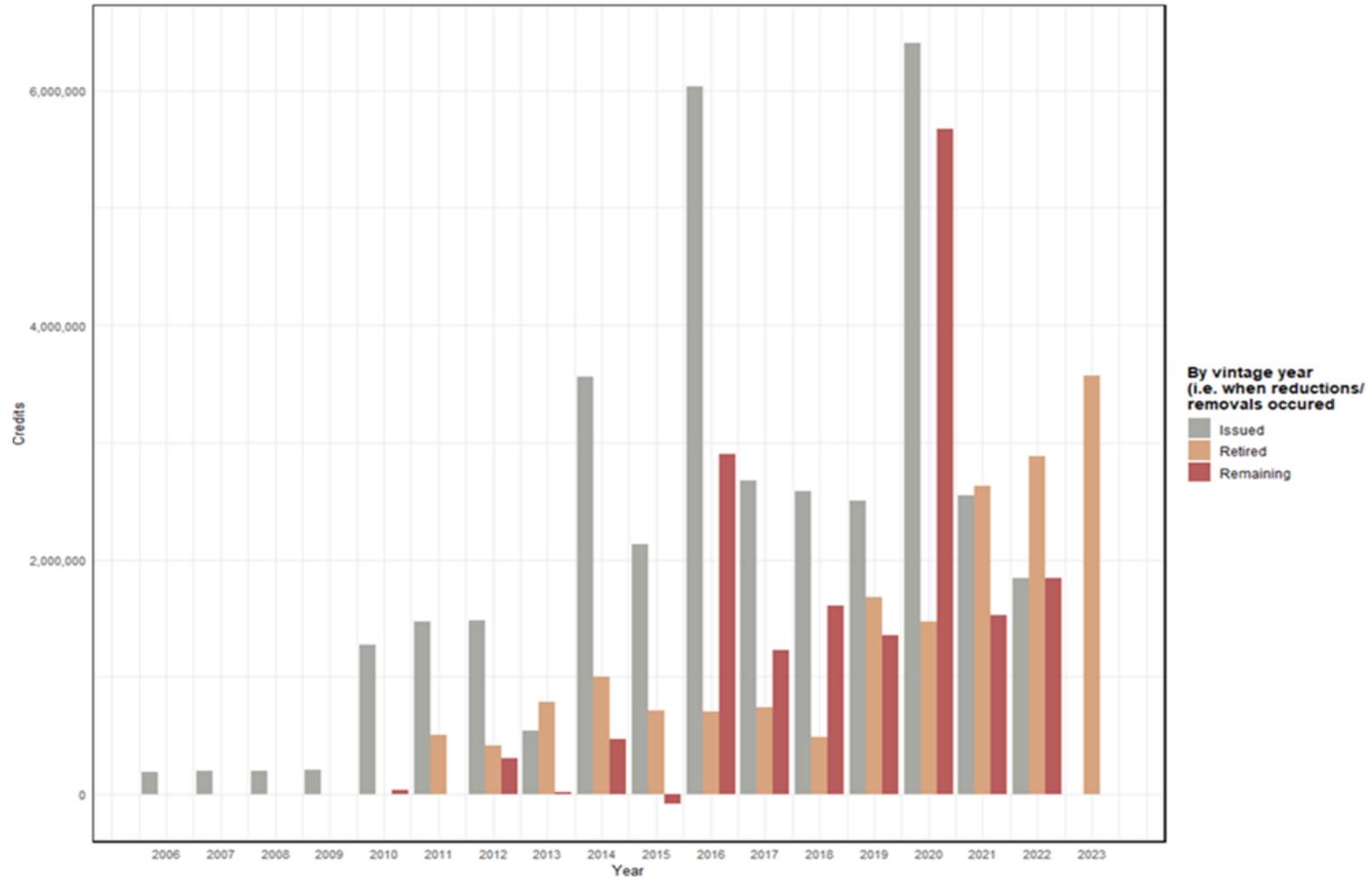
¹⁹ 'Jurisdictional REDD+' encompasses regions, e.g. nations or subnational administrative/governance units. Standard REDD+ is typically project based.

Figure 11. Voluntary carbon credits issued by sub-Saharan African countries through forestry and land use projects, 1996–2024²⁰



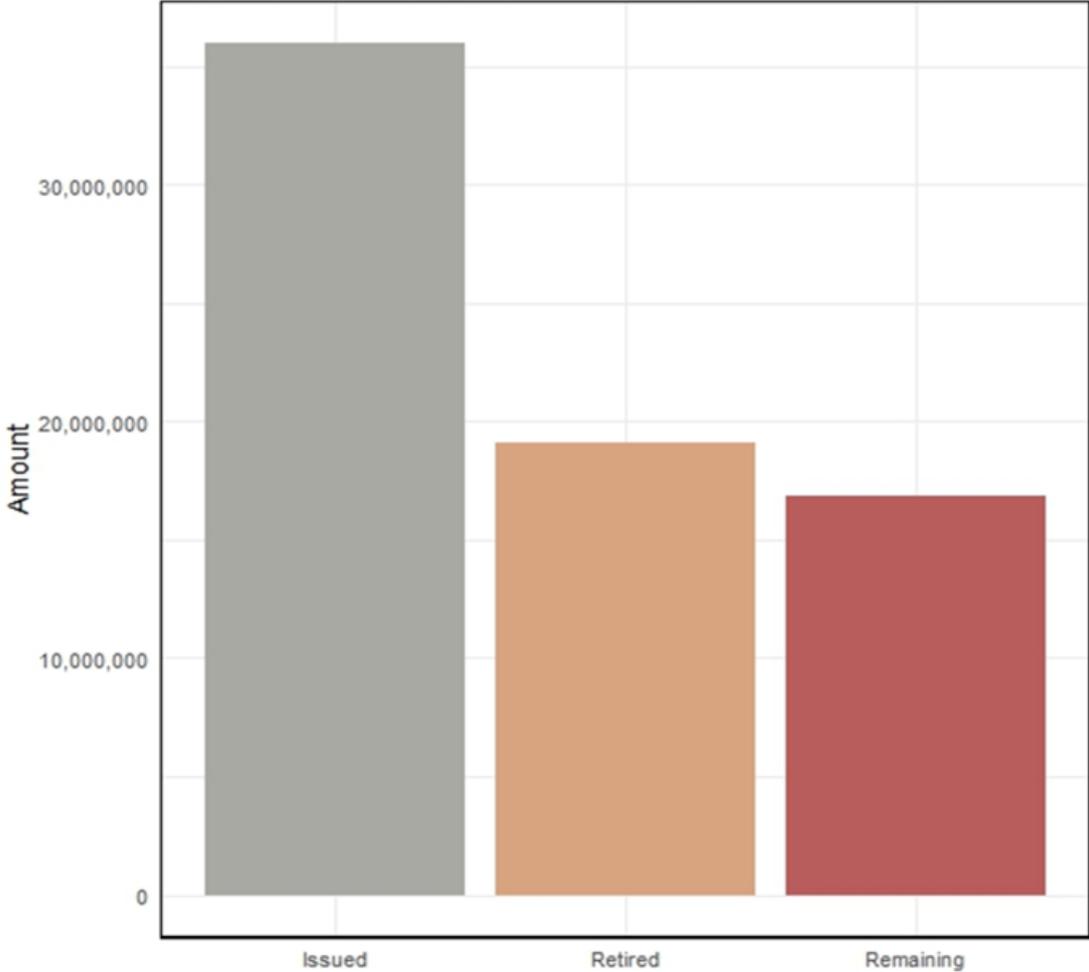
²⁰ Source: Authors. We used the Voluntary-Registry-Offsets-Database-v2024-10 downloaded from Berkley's voluntary registry offset database and focused on project scope "forestry and land use".

Figure 12. Credits issued and retired in Kenya's voluntary carbon market, by land use 2006-2023²¹



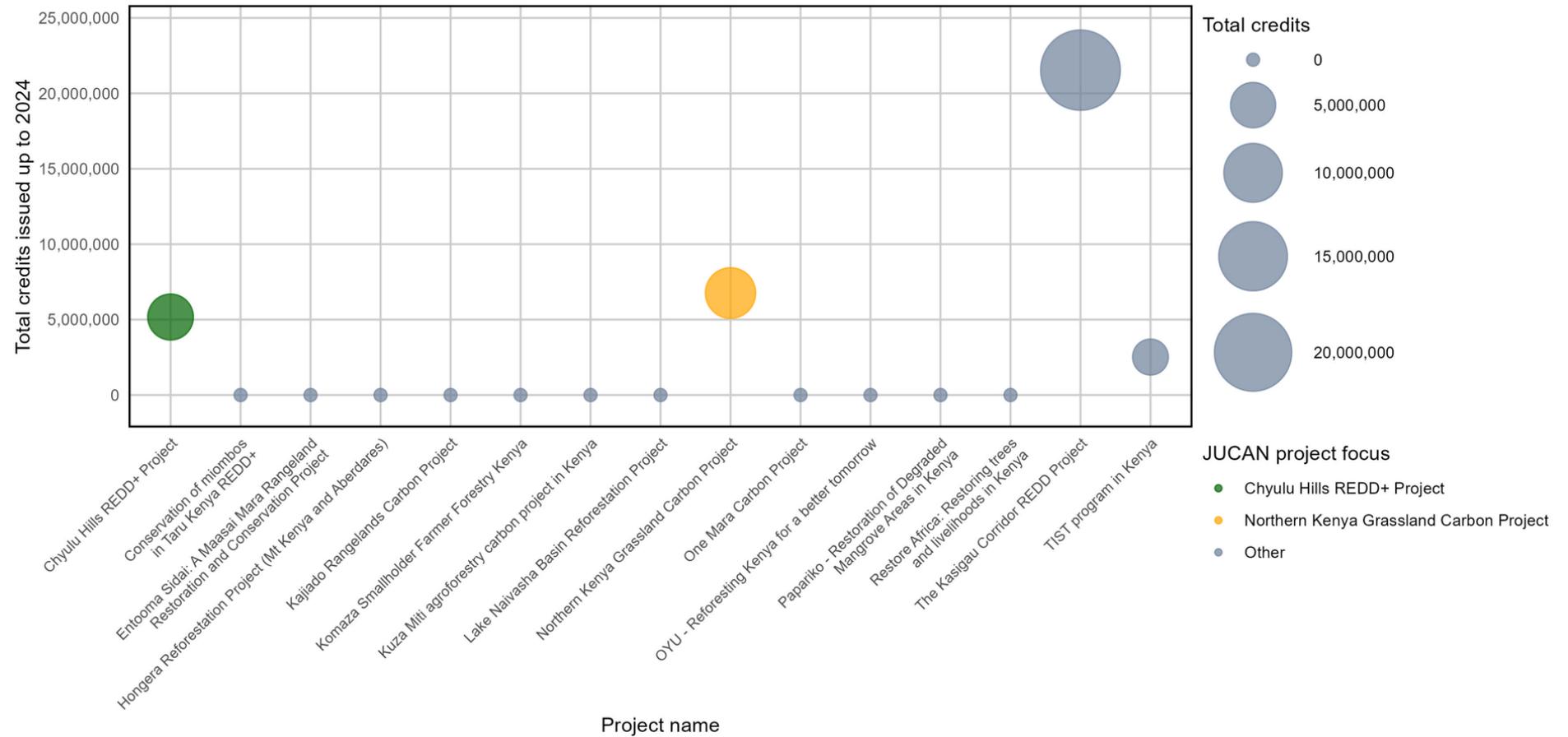
²¹ Source: Authors. Method: We used the Voluntary-Registry-Offsets-Database-v2024-10 downloaded from Berkley's voluntary registry offset database to explore trends over time for Kenya. We summed up records for all projects with the scope of 'forestry and land use' by vintage year.

Figure 13. Credits issued and retired in Kenya’s voluntary carbon market, USD total 2006-2023²²



²² Source: Authors. Method: We used the Voluntary-Registry-Offsets-Database--v2024-10 downloaded from Berkley's voluntary registry offsets database, summarised across years and projects

Figure 14. Bubble chart of credits issued by projects in Kenya²³



²³ Source: Authors. Method: We used the Voluntary-Registry-Offsets-Database-v2024-10 downloaded from Berkley's voluntary registry offsets database, focusing on the scope of 'forest and land use' and showing total credits issued by projects in Kenya.

5.4 Other NbS-related financing to Kenya

Clean Development Mechanism

By the end of 2024, Kenya had a total of 29 projects accounted under the Clean Development Mechanism (CDM) of the Kyoto Protocol. Given the nature of CDM projects, almost all of these were in the energy sector (household cookstove projects, renewable energy project, geothermal energy, etc). Such projects may indirectly relate to NbS (e.g. avoiding charcoal production through new household stoves), but direct NbS activities do not appear to have taken place in these projects. The future of CDM is currently unclear.

Emerging UNFCCC mechanisms

In Kenya, REDD+ credits are currently traded within the voluntary market through individual projects. REDD+ projects in the voluntary markets are not currently covered in the Paris Agreement. Kenya has received funding to enhance REDD+ Readiness capacity, preparing the country to participate in REDD+ schemes under the Paris Agreement. This will allow REDD+ schemes under the Paris Agreement that financially reward Kenya for forest protection and reforestation. However, while Article 5.2 of the Paris Agreement encourages REDD+ activities, it does not provide for a credit market. Promoters of forest carbon trading schemes therefore seek instead to develop credit schemes under the Paris Agreement's Article 6, which allows countries to cut emissions by investing in projects that reduce emissions in other countries. This includes bilateral agreements between countries in which credits (so-called 'Internationally Transferrable Mitigation Outcomes' – ITMOs) can be transferred from one country to another. Kenya has currently signed three such bilateral MoUs with Japan, Singapore and Switzerland, respectively. The agreements are quite broad, with limited activity so far, although two energy projects are underway under the agreement with Japan. In the future, these voluntary bilateral agreements under the Paris Agreement might well include NbS projects in which, e.g. forest restoration in Kenya is used to offset emissions in the partner country.

MoUs with private entities

In 2023, Kenya's Ministry of Environment and Climate Change further entered a 'Framework of Collaboration' agreement with the Dubai-based Company 'Blue Carbon' (parent company: Global Carbon Investments). Despite the name, Blue Carbon aims to support mainly land-based carbon credit initiatives in African countries. Details of the agreement with Kenya are not well known, but according to press releases, it is focused on REDD+ projects under Article 6 of the Paris Agreement (i.e. the compliance market) and covers an area of 7.5 million hectares in Kenya. In the same year, Blue Carbon made similar agreements with Liberia, Tanzania, Zambia and Zimbabwe. In total, the five African agreements with Blue Carbon are reported to cover more than 24 million hectares of land-based nature restoration activities. Specific activities and value remain unclear. Some sources estimate the agreement with Zimbabwe at USD 1.5 billion, signalling the potential significance of bilateral agreements with private companies in carbon credit financed NbS.

BOX 10. KEY TAKEAWAYS ON KENYA'S CLIMATE FINANCE LANDSCAPE

- Kenya is among the highest recipients of public and philanthropic climate finance in Africa.
- On the voluntary carbon markets, Kenya ranks ninth globally in issuance of NbS carbon credits.
- In sub-Saharan Africa, Kenya has issued the second most voluntary credits after the DRC.
- The majority of Kenya's voluntary credits are NbS-related (rather than renewables).
- This is consistent with international voluntary markets, where NbS has overtaken renewables.
- Overall, issues and retirements of carbon credits in Kenya have been positive over the past five years.
- However, not all credits issued have been retired (i.e. used).
- Internationally, voluntary markets have been volatile and impacted by greenwashing debates.

6. CONCLUSION

Nature-based Solutions in Kenya are evolving within a complex institutional and political landscape shaped by historical legacies, emerging carbon markets and developing policy frameworks. NbS projects in Kenya are diverse, and many are not connected to carbon markets but are financed through other means. This working paper has focused on NbS projects that generate income from carbon credits, and the institutional frameworks that govern them. As such, these projects are closely linked to the emergence of international carbon trading markets and the development of policies, laws and contestations around these in Kenya.

While the term ‘Nature-based Solutions’ is increasingly applied at the project level, it has only recently emerged in Kenya’s national legislation and policy frameworks as a term in itself. However, the specific national frameworks for carbon credit trading are relatively well developed, as are broader frameworks for natural resource governance on forests, land, water, etc. The 2024 Carbon Regulations, in particular, are noteworthy for being among the first of this kind in Africa, and for including specific stipulations on benefit allocation ratios to communities.

The gradual emergence of land-based carbon offset projects in Kenya since the mid-2000s – bolstered by REDD+ initiatives, international donor support and a current government ambition to become Africa’s ‘carbon hub’ – has positioned Kenya among the continent’s leaders when it comes to forest- and land-based carbon credits on the voluntary carbon market, which is currently the main mechanism engaged by NbS projects in Kenya. However, this position rests on relatively few projects. It occurs in a wider context where international carbon markets are volatile and have shown sensitivity to public debate over the legitimacy of carbon trading and concerns over greenwashing. Whether current negotiations to develop the UNFCCC-aligned compliance market will provide new and more transparent opportunities for NbS projects in Kenya remains to be seen.

Meanwhile, most current NbS projects in Kenya that sell carbon credits were initiated before these ongoing developments in the international and national frameworks and are primarily oriented towards the verification standards in international voluntary markets – which are themselves becoming increasingly complex. How NbS projects deal with these developments and other current changes – e.g. transitions from communal to privately owned land in many NbS project areas – will be important to understand in studies of NbS governance in Kenya in the coming years.

A diverse array of actors – including local communities, NGOs, government bodies, donors, brokers and verification agencies – shape NbS projects in Kenya. This makes it critical to analyse governance of NbS projects not just through formal frameworks but also through the practical interactions between the multiple actors at different levels. NbS projects in Kenya are furthermore implemented in a historical context of top-down conservation interventions and contested land rights, and where priorities, perceptions and expectations may differ widely between the involved actors. Significant gaps remain in understanding how these different perceptions shape the institutionalisation of NbS at national and local levels, how actors navigate challenges related to land rights, justice, and inclusion in practice, and what the outcomes are. These are among the key questions currently being explored by the JUCAN research project.

REFERENCES

- ACMI. (2022) Africa Carbon Markets Initiative: Roadmap Report 2022.
- Ajwang, F., Arora, S., Atela, J., Onyango, J., and Kyari, M. (2023). Enabling modernisation, marginalising alternatives? Kenya's agricultural policy and smallholders. *Journal of International Development*, 35(1), 3–20.
- Anderson, D. (1984). Depression, Dust Bowl, Demography, and Drought - the Colonial State and Soil Conservation in East-Africa during the 1930s. *African Affairs*, 83(332), 321–343.
- Anderson, D. (1987). Managing the forest: The conservation history of Lembus, Kenya, 1904–63. *Conservation in Africa: People, policies and practice*, 249–268.
- Anderson, D. (2002). Eroding the commons : the politics of ecology in Baringo, Kenya, 1890s–1963. James Currey.
- Atela, J. (2015). Carbon in Africa's agricultural landscapes: a Kenyan case. In: Leach, M.; scoones, I.: Carbon conflicts and forest landscapes in Africa (pp. 79–93). Routledge.
- Atela, J. O., Quinn, C. H., Minang, P. A., Duguma, L. A., and Houdet, J. A. (2016). Implementing REDD+ at the national level: Stakeholder engagement and policy coherences between REDD+ rules and Kenya's sectoral policies. *Forest Policy and Economics*, 65, 37–46.
- Bernard, F., Minang, P. A., Adkins, B., and Freund, J. T. (2014). REDD+ projects and national-level Readiness processes: a case study from Kenya. *Climate Policy*, 14(6), 788–800.
- Bersaglio, B., and Cleaver, F. (2018). Green grab by bricolage –The institutional workings of community conservancies in Kenya. *Conservation and Society*, 16(4), 467–480.
- Boyland, M., Tuhkanen, H., Green, J., and Barquet, K. (2022). Principles for just and equitable nature-based solutions. Stockholm Environment Institute. <https://doi.org/10.51414/sei2022>.
- Climate_Focus. (2025). Voluntary Carbon Market Review 2024.
- Cockerill, K. A., and Hagerman, S. M. (2020). Historical insights for understanding the emergence of community-based conservation in Kenya: international agendas, colonial legacies, and contested worldviews. *Ecology & Society*, 25(2).
- Cohen-Shacham, E., Andrade, A., Dalton, J., Dudley, N., Jones, M., Kumar, C., Maginnis, S., Maynard, S., Nelson, C. R., and Renaud, F. G. (2019). Core principles for successfully implementing and upscaling Nature-based Solutions. *Environmental Science & Policy*, 98, 20–29.
- Downing, T. A., and Olago, D. O. (2024). History of 'nature-based' solutions to land degradation in the savannahs of Kenya: An analysis of literature and archival records. *Environmental Science & Policy*, 161, 103874.

- Ferreira, V., Barreira, A. P., Loures, L., Antunes, D., and Panagopoulos, T. (2020). Stakeholders' engagement on nature-based solutions: A systematic literature review. *Sustainability*, 12(2), 640.
- Gravesen, M. L., and Funder, M. (2021). Nature-based solutions to development and climate change challenges: Understanding ecosystem-based adaptation approaches. DIIS Working Paper 2021:09. Danish Institute for International Studies.
- Hassan, R., Nathan, I., and Kanyinga, K. (2023). Will community rights secure pastoralists' access to land? The Community Land Act in Kenya and its implications for Samburu pastoralists. *The Journal of Peasant Studies*, 50(5), 1735–1756.
- Hassan, R., Kanyinga, K., and Nathan, I. (2023). No Option but to Settle! The Community Land Act, Devolution and Pastoralism in Samburu County, Kenya. *Nomadic Peoples*, 27(2), 292–314.
- Hill, P. (1966). A Plea for indigenous economics: the West African example. *Economic Development and Cultural Change*, 15(1), 10–20.
- Huxham, M., Kairu, A., Lang'At, J. K., Kivugo, R., Mwafrica, M., Huff, A., and Shilland, R. (2023). Rawls in the mangrove: Perceptions of justice in nature-based solutions projects. *People and nature*, 5(5), 1497–1511.
- IUCN. (2020 a). Guidance for using the IUCN Global Standard for Nature-based Solutions.
- IUCN. (2020 b). IUCN Global Standard for Nature-based Solutions.
- IUCN. (2025). Revised Global Standard for Nature-based Solutions. <https://inbs.iucn.org/understand/global-standard-for-nature-based-solutions/>
- Melanidis, M. S., and Hagerman, S. (2022). Competing narratives of nature-based solutions: Leveraging the power of nature or dangerous distraction? *Environmental Science & Policy*, 132, 273–281.
- MoFA/Danida. (2023). Project Document: Increased resilience through adoption of nature-based solutions, access to water and renewable energy: Support to Northern Rangelands Trust (NRT) NbS, Water and Clean Energy Project 2024–2028. Danish Ministry of Foreign Affairs.
- MSCI. (2025). Investment trends and outcomes in the global carbon credit market (Update November 2024).
- Mulwa, J., Kioko, E., and Gravesen, M. L. (2025). Aligning the management of nature-based solutions to locally led adaptation principles: A case study of sand dams in Makueni County, Kenya. *Nature-Based Solutions*, 7, 100226.
- Muok, B. O., Mosberg, M., Eriksen, S. E. H., and Ong'ech, D. O. (2021). The politics of forest governance in a changing climate: Political reforms, conflict and socio-environmental changes in Laikipia, Kenya. *Forest Policy and Economics*, 132, 102590.
- Mutisya, T. W., Zejiao, L., and Juma, N. (2010). Soil and water conservation in Kenya-operations, achievements and challenges of the National

- Agriculture and Livestock Extension Programme (NALEP). *Journal of American Science*, 6(3), 7–15.
- Nature4Climate. (2024). A Guide for Including Nature in Nationally Determined Contributions.
- Ombati, M. (2025). The colonial project in Kenya's 'White Highlands' and the continuing devastation of pastoral livelihoods. In: Deb, N.; Nair, M.; Muschert, G.M.: Handbook of Social Justice in the Global South.
- Osaka, S., Bellamy, R., and Castree, N. (2021). Framing 'nature-based' solutions to climate change. *Wiley Interdisciplinary Reviews: Climate Change*, 12(5), e729.
- Rotich, S. J., Funder, M., Marani, M., and Nathan, I. (2025). Climate change adaptation and land tenure: Exploring pastoral adaptation strategies under communal and private land ownership in Kenya. *Local Environment*, 30(1), 37–57.
- Seddon, N. (2022). Harnessing the potential of nature-based solutions for mitigating and adapting to climate change. *Science*, 376(6600), 1410–1416.
- Seddon, N., Chausson, A., Berry, P., Girardin, C. A., Smith, A., and Turner, B. (2020). Understanding the value and limits of nature-based solutions to climate change and other global challenges. *Philosophical Transactions of the Royal Society B*, 375(1794), 20190120.
- Shanguhya, M. S. (2024). *Politics of Colonial Conservation in Kenya*. Oxford University Press.
- UNDP. (2021). Consideration for Integrating Nature-Based Solutions in Nationally Determined Contributions Illustrating the Potential Through REDD+. UNDP.
- UNDP. (2024). Climate Finance in Africa: An overview of climate finance flows, challenges and opportunities.
- Wachira, J., Atela, J., Stacey, P., and Outa, G. (2024). NGO-Led Community-Based Conservation: A New Frontier of Territorialization with Implications for Pastoralists' Land Tenure and Climate Change Adaptation. *Land*, 13(6), 740.
- WB. (2021). Nesting of REDD+ Initiatives: Manual for Policymakers (Vol. 2): Decision Support Tool. World Bank.
- WB. (2024). A Carbon Market Guidebook for Kenyan Enterprises. World Bank.

