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USING INNOVATIVE LAND CONSERVATION TOOLS IN AFRICA TO PROTECT LAND, ENHANCE RESOURCE MANAGEMENT AND IMPROVE COMMUNITY LIVELIHOODS

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Abstract:

Africa is facing unprecedented habitat and species loss. While Africa hosts an important network of protected areas that supports wildlife, ecosystem services and generates revenue for host countries; Africa's protected areas are too small and isolated to support viable populations of wildlife and substantially benefit local communities. If Africa's wildlife is going to thrive in the future, land must be secured outside of protected areas and in a way that benefits the landowners and improves livelihoods. This requires creative conservation tools that are grounded in clear land tenure rights and community participation, and utilizes responsible investment to incentivize improved natural resource management. The African Wildlife Foundation (AWF) has implemented successful models in Africa that have protected strategic land for conservation purposes and improved community livelihoods. AWF has executed environmental easements, payment for ecosystem services, conservation leases, community conservancies, conservation agreements and land use plans. This paper and presentation outlines specific field based case studies on land investments that have resulted in conservation, better land management and benefits to communities in Kenya, Zambia and the Democratic Republic of Congo and makes recommendations on how to incentivize conservation and develop a legal framework that provides for various land conservation mechanisms.

Key Words:

Land Conservation, Africa, Wildlife Conservation, Legal Conservation Mechanisms, Community Livelihoods, Land Tenure, Leases, Environmental Easement, Biodiversity, Payment for Ecosystem Service, Conservation Agreement, Land Use Plan, Kenya, Zambia, Democratic Republic of Congo

Executive Summary

Africa is facing unprecedented habitat and species loss. Projections of the impact of global change on biodiversity show continuing and in many cases accelerating species extinctions, loss of habitat, and changes in the distribution and abundance of species and biomes over the 21st Century (Secretariat of the Convention on Biological Diversity, 2010). A number of factors is leading to the decline of Africa's biological diversity such as global demand for Africa's natural resources, economic growth, increasing urbanization, increasing trade, climate change and human population growth.

While Africa hosts an important network of protected areas that supports wildlife, ecosystem services and generates revenue for host countries; this network is too small and isolated to support viable populations of wildlife and local communities are limited in how they can benefit. If Africa's wildlife is going to thrive in the future and if critically important ecosystem services upon which wildlife and people depend are to be maintained, large landscapes must be conserved and land outside of protected areas must be protected in ways that benefit the landowners and improves livelihoods. This requires creative conservation approaches that are grounded in clear and secure resource tenure rights and landowner participation, and utilizes responsible investment to incentivize improved natural resource management.

The African Wildlife Foundation (AWF) is an international non-governmental organization headquartered in Nairobi, Kenya. AWF's mission is 'to work together with the people of Africa to ensure that the wildlife and wild lands of Africa endure forever.' AWF's Land and Habitat Conservation program aims to secure strategic lands to protect the ecological integrity of landscapes and suitable habitat for viable populations of wildlife. AWF has successfully implemented new land conservation mechanisms that protect land and provide benefits to landowners. This paper outlines four land conservation mechanisms executed by AWF: environmental easement in Kenya; payment for ecosystem service conservation leases in Kenya; community trust in Zambia; and land use plans and conservation agreements in the Democratic Republic of Congo. To scale up the use of these tools legislative frameworks should be established in each country to support the use of these land mechanisms. Landowners should be incentivized to conserve their land and the legal framework should provide clarity on valuation, tenure, term and institutional arrangements. In addition, countries should establish payment for ecosystem service funds to financially support the conservation of communal and private land.

Introduction

Africa is facing unprecedented habitat and species loss. Projections of the impact of global change on biodiversity show continuing and in many cases accelerating species extinctions, loss of habitat, and changes in the distribution and abundance of species and biomes over the 21st Century (Secretariat of the Convention on Biological Diversity, 2010). Climate change is projected to accelerate the rate of species and habitat loss (Millennium Ecosystem Assessment**,** 2005; IPCC Assessment Report, 2007). New and innovative conservation mechanisms are needed to halt this rapid decline (Gitahi, et al. 2011).

A number of factors is leading to the decline of Africa's biological diversity such as global demand for Africa's natural resources, a decade of high economic growth on the continent, increasing urbanization, climate change and increasing trade opportunities with new economic powers such as China. Africa is developing more rapidly than ever before. Human population is increasing putting more demand on natural resources. The population in Africa today is estimated at 1.033 billion (World Population Review, 2014) and this is projected to grow by 2% per year.

While Africa hosts an important network of protected areas that supports wildlife, ecosystem services and generates revenue for host countries; this network is too small and isolated to support viable populations of wildlife and local communities are limited in how they can benefit. A majority of wildlife spend their time outside of protected areas. If Africa's wildlife is going to thrive in the future and if critically important ecosystem services upon which wildlife and people depend are to be maintained, large landscapes must be conserved and land outside of protected areas must be protected in ways that benefit the landowners and improves livelihoods. This requires creative conservation approaches that are grounded in clear and secure resource tenure rights and landowner participation, and utilizes responsible investment to incentivize improved natural resource management.

The African Wildlife Foundation (AWF), founded in 1961, is an international non-governmental organization headquartered in Nairobi, Kenya. AWF's mission is 'to work together with the people of Africa to ensure that the wildlife and wild lands of Africa endure forever.' AWF has an integrated large landscape-scale approach, which addresses threats to conservation, sustainable natural resource management and improvement of livelihoods. AWF currently works in 16 countries in central, eastern, southern and western Africa.

AWF's program is built around five strategic areas: applied conservation science and research; land and habitat conservation; conservation enterprise; climate change; and capacity and leadership development.

Policy development is a cross-cutting theme that is integrated into each of these programs. Through these programs AWF aims to facilitate practical, field-based solutions to global and local sustainable natural resource management challenges in Africa.

AWF's Land and Habitat Conservation program aims to secure strategic lands to protect the ecological integrity of landscapes and suitable habitat for viable populations of wildlife. AWF employs a variety of strategies and tools towards achieving its land conservation objectives, including support to protected areas, land use planning, establishment of community conservancies, and corridor designation. Central to AWF's land conservation strategy is to provide meaningful benefits to community landowners. For example, AWF's well-established conservation enterprise program secures land conservation with payments to communities from viable enterprises such as tourism lodges. However, given the rate of land use change in certain regions and accelerated threats across the continent, AWF has been exploring and piloting new land conservation mechanisms.

AWF has successfully implemented new and innovative land tools to protect strategic land and improve community livelihoods. These transactions are based on the interest of and voluntary participation from landowners, thorough due diligence, free prior informed consent, responsible investment, and clear land tenure. AWF executed the first environmental easement in Kenya, implemented a payment for ecosystem services (PES) conservation lease program, established community conservancies through community trusts, and is working to secure forest land through land use planning and conservation agreements. This paper provides specific field-based case studies on land investments that have resulted in conservation, better land management and benefits to communities.

Based on AWF's experience with these mechanisms, AWF has found that while the legal frameworks in many African countries enable conservation, there are ways in which these frameworks can be strengthened. Specifically, AWF recommends that:

- countries should incentivize voluntary conservation measures by establishing laws that provide for easements, leases, community trusts, land use plans and conservation agreements;
- legal frameworks need to outline a clear valuation process for easements, leases, PES and other voluntary land restriction mechanisms;
- countries should establish a PES fund that provides funding to incentivize landowners to protect their land with a clear framework on procedures for valuation; and

- legal frameworks should restrict the holder of easements, leases, and conservation agreements to organizations that have a conservation mission and the ability to monitor and uphold conservation easements.

Environmental Easement, Kenya

An environmental easement is an agreement between a landowner and an easement holder, which restricts certain uses of a property to achieve conservation purposes. Environmental easements have been used in North America for decades as a mechanism for private landowners to protect certain aspects of their land, such as biodiversity, scenic beauty, and recreational values. An easement enables a landowner to retain ownership while simultaneously achieving a conservation outcome. The execution of an easement in the United States is voluntary and may provide a landowner with a tax benefit, which is significant conservation incentive.

Environmental easements had not been used in East Africa, until AWF executed the first easement in Kenya in 2011. Easements were adopted into the Kenyan law by the Kenya Order in Council of 1921, which approved the general application to Kenya of English Common Law as it was in August 1897. The Order in Council was subsequently confirmed in independent Kenya by the Judicature Act of 1967. (Watson, et al. 2010)

Easements are most commonly known in Kenya as creating a right, such as a right of way or a water usage right. The use of easements for conservation purposes was historically provided for in the 1999 Environmental Management and Coordination Act (EMCA); however, its use has not been exercised as through EMCA.

Through EMCA, environmental easements are intended to *'further the principles of environmental management set out in this Act by facilitating the conservation and enhancement of the environment … through the imposition of one or more obligations in respect of the use of the land,'* and may last in perpetuity or for a limited term (S112). The key term is 'imposition;' making easements an imposition as opposed to a voluntary transaction.

Under S113, *'a person or a group of persons may make an application to the court for the grant of one or more environmental easements,'* the court imposing, *'such conditions on the grant … as it considers to be best calculated to advance the object of an environmental easement.'*

As per EMCA, anyone can go to court and apply for an easement on someone else's land without their approval, and if approved, the applicant becomes the easement holder. To ensure the long-term sustainability of easements, AWF recommends that easements first and foremost should be voluntary. Easement holders should be institutions that have a conservation mission and can monitor and uphold easements. EMCA stipulates that the landowner is entitled to compensation commensurate with the lost value of the land and the person awarded the easement pays the compensation, unless the court determines a national importance; then the government may be instructed to compensate the landowner; however, the Act does not outline a valuation process.

Involvement of the court and the involuntary nature of the easement via EMCA insinuates a contentious process. AWF believes that parties, a landowner and an appropriate conservation organization, could voluntarily agree to an easement outside of court and jointly bring the matter to the court for approval; however, this has not been tested in court.

The Registered Land Act (RLA) 1989 (Revised 2010) also provides for easements and gives statutory recognition to an easement that it defines as:

'...a right attached to a parcel of land which allows the proprietor of the parcel of land either to use the land of another in a particular manner or to restrict its use to a particular extent, but does not include a profit.'

The RLA allows that: *'The proprietor of land or a lease may, by an instrument in the prescribed form, grant an easement over his land or the land comprised in his lease, to the proprietor or lessee of other land for the benefit of that other land.'*

RLA enables the execution of an environmental easement utilizing benefited and burdened properties. The property that benefits from the restrictions placed on the land by an easement is called the "benefited environment," and the land subject to the easement is called the "burdened land." (Gitahi, et al. 2011)

In 2010 AWF was approached by a private Kenyan landowner, Mr. John Keen, who wanted to retain ownership of his land while simultaneously protecting it from development pressures and resource extraction over the long-term. The land, 100 hectares, is directly adjacent to Nairobi National Park (NNP), making the use of the easement framework in the RLA the appropriate mechanism.

Founded in 1946, NNP is 28,963 acres and hosts a wide diversity of wildlife, including rhino, lion, buffalo, giraffe, and cheetah. NNP is the first National Park in Africa in a major city. It is widely visited, provides important green space in Nairobi and hosts important wildlife. Like many protected areas in Kenya, NNP is dependent upon the adjacent lands for its survival. The land to the south of NNP was formerly owned collectively as group ranches by Maasai pastoralists that have since been privatized and sub-divided. These private lands have become highly developed, creating a hard edge to the park and putting the entire Park at risk as wildlife corridors are closed and human-wildlife conflict escalates. With the growing pressures of Nairobi, maintaining this land as open for wildlife and livestock has become severely challenging. Sub-division and land conversion is rampant, and land prices are extraordinarily high.

Keen's land abuts NNP to the south and the execution of the voluntary environmental easement adds over 100 hectares of habitat to the Park, while also setting an exceptional precedent in Kenya. Keen donated the environmental easement to AWF and the Kenya Wildlife Service (KWS) — the first environmental easement in Kenya. NNP is the benefitted property and Keen's land is the burdened property. The easement expands NNP, protects wildlife habitat and secures the private landowner's property for future generations. The easement is registered against Keen's title and AWF and KWS have the obligation to monitor compliance with the easement.

In December 2013, Kenya enacted the Wildlife Conservation and Management Act (WCMA), which also provides for environmental easements. Section 61(1) states that '*Wildlife conservation easements may be created by voluntary private arrangement or upon appropriate application to the Environment and Land Court*.' The Act provides for the voluntary execution of easements, however, the granting of the easement must be done by the Environment and Land Court. The Act stipulates the purposes of the easement, including protection of flora, fauna and migration corridors, protection of ecological features, water, and scenic views and to prevent infrastructural, mining or agricultural activities that may adversely affect wildlife conservation. The Act still enables anyone to be the easement holder. It utilizes the benefitted and burdened property, but also enables an individual to be the benefitted party. The Act provides that the owner of the restricted property may be compensated; however, does not outline the process for compensation.

While WCMA is an advancement from EMCA in that it provides for voluntary easements, there is a need for a valuation process to be formally agreed upon and holders of easements should be institutions that have a conservation mission and the ability to monitor and uphold environmental easements.

An environmental easement is a valuable tool that may be used in Kenya to protect private lands. AWF urges other countries in Africa that have private land tenure to provide for the use of voluntary easements as a conservation mechanism. Easement holders should be organizations with a conservation focus and the ability to uphold the easement. A valuation process should be clearly outlined and easements should be executed in perpetuity so as to achieve the conservation objective.

Biodiversity Payment for Ecosystem Services Lease Program, Kenya

While the specific term 'Payment for Ecosystem Services' emerged in the late 1990s (Ravenborg, et al. 2007) as a mechanism for rewarding land and resource management practices which sustain and restore ecosystem service functions (Fitzgerald, 2013), the concept of compensating such beneficial behaviors goes back several decades (De Groot, et al. 2010). An eco-system service (ES) is "the benefits of nature to households, communities, and economies" (Boyd, et al. 2007).

The Millennium Ecosystem Assessment (MEA) distinguishes between three ecosystem services, based on a functional perspective:

- provisioning services, such as food, water, timber, and fibre;
- regulating services, such as floods, drought, land degradation, and disease; and
- supporting services, such as soil formation and nutrient cycling.

Generally four types of eco-system services are described in the PES literature:

- hydrological services;
- carbon sequestration;
- biodiversity protection; and
- landscape beauty.

(Ravenborg, et al. 2007)

The most commonly recognized definition of a PES contains five key components:

1. a voluntary transaction where
2. a well-defined ES (or a land-use likely to secure that service)
3. is being 'bought' by a (minimum one) ES buyer
4. from a (minimum one) ES provider
5. if and only if the ES provider secures ES provision (conditionality).

(Fitzgerald, 2013)

The AWF conservation lease program described herein is a PES program that is protecting biodiversity, meets the above criterion and includes all four ecosystem services outlined above.

Amboseli Ecosystem

Amboseli National Park (ANP) is located in the semi-arid landscapes in southern Kenya on the border of Tanzania. The Park, 392 km^2, forms the core of the greater ecosystem while six community lands—group ranches, surround the Park. While ANP is world renowned for its elephants, diverse wildlife and magnificent views of Mt. Kilimanjaro, the Park is too small to support viable populations of elephants, predators and certain ungulates. Wildlife is dependent on the unprotected areas outside the Park. If the Park is to survive and the eco-system to support viable populations of wildlife, the Park must be maintained and the surrounding strategic dispersal areas and wildlife corridors protected.

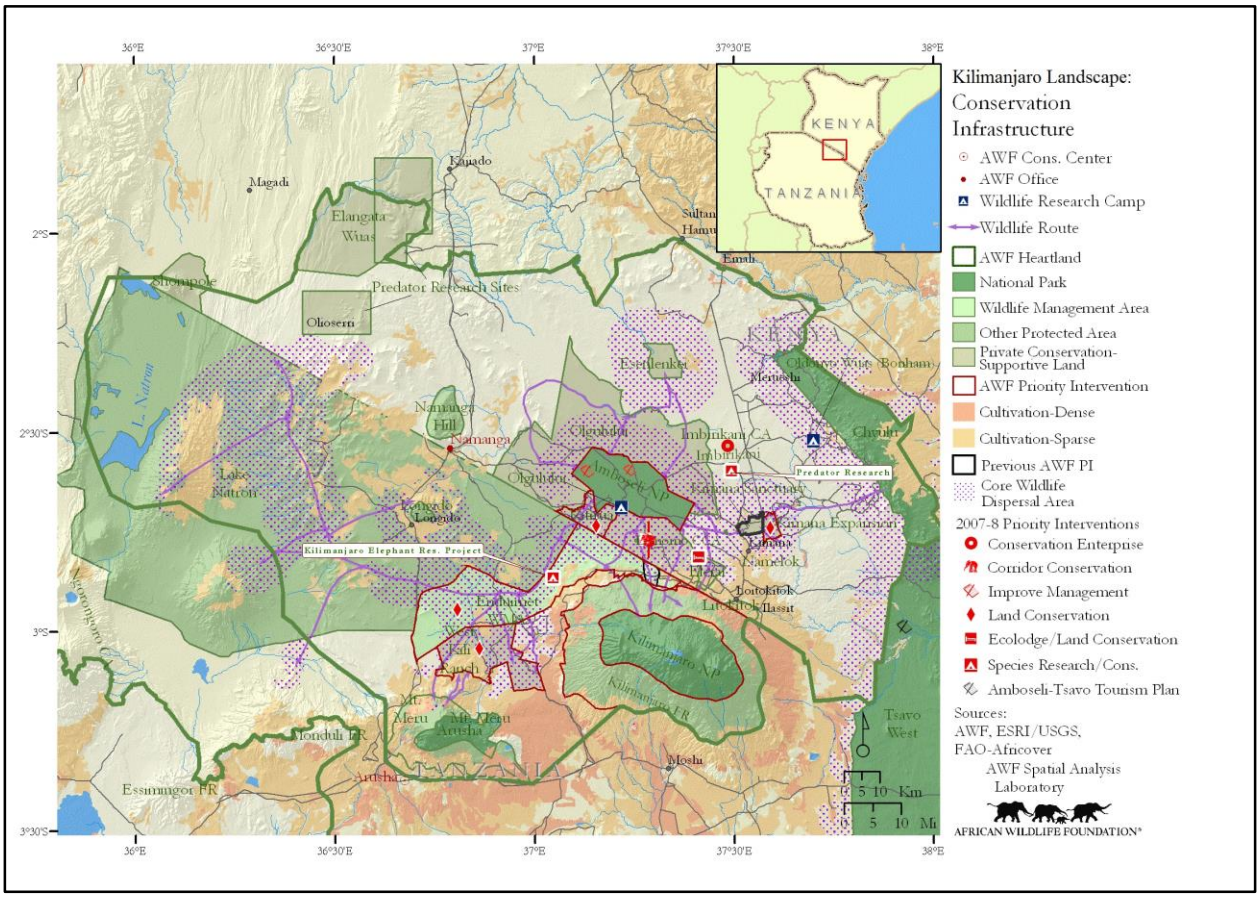

Figure 1: Amboseli Ecosystem, southern Kenya and northern Tanzania.

The Amboseli ecosystem has an elephant population of approximately 1,500 individuals. These elephants are a major driving force in the ecology of the ecosystem and the subject of one of the longest elephant studies in Africa by the Amboseli Elephants Trust (AET). Scientists monitoring the elephant population

have documented their movement patterns and that of other wildlife species. The land stretching from ANP to the Chyulu Hills is one of the main wildlife movement routes identified by researchers as a top conservation priority in the ecosystem. In the wet season, mammals disperse out of Amboseli, move through Kimana Group Ranch (25,120 hectares) to Kimana Sanctuary to Chyulu West National Park. This strategic linkage is critical to the viability of Amboseli's elephant population and other wildlife of the park.

The challenge of securing habitat outside of protected areas for wildlife movements is aptly displayed in the Amboseli ecosystem, where elephants traverse community-owned pasture and cultivated land as they move between safe havens. The result is human-elephant conflict, economic loss for communities and the demise of wildlife through killings in retaliation and defense.

Current & Historic Use

The Amboseli ecosystem has been occupied by Maasai pastoralists for centuries and pastoralism has been the main economic activity in the ecosystem. The Maasai rely heavily on community lands for grazing livestock, sourcing medicinal plants, building materials and firewood. Tourism has been part of this ecosystem for decades; however, unequal distribution of and/or lack of sufficient benefits are problematic as landowners do not feel that they adequately benefit from the industry (Okello, et al. 2011). Due to increasing population and changing lifestyles, pastoralists have started farming and/or leasing land to farmers, especially near the swamps (Cambell, et al. 2003) where water is readily available. Elephants and other wildlife depend on these swamps for water and food and continue to access this historical resource; thus, encroaching on farms, which has led to a significant increase in human-elephant conflict. Land use on these community lands vary greatly, yielding an inconsistent and unstable environment for elephants and other wildlife, and frustrating the communities' livelihoods.

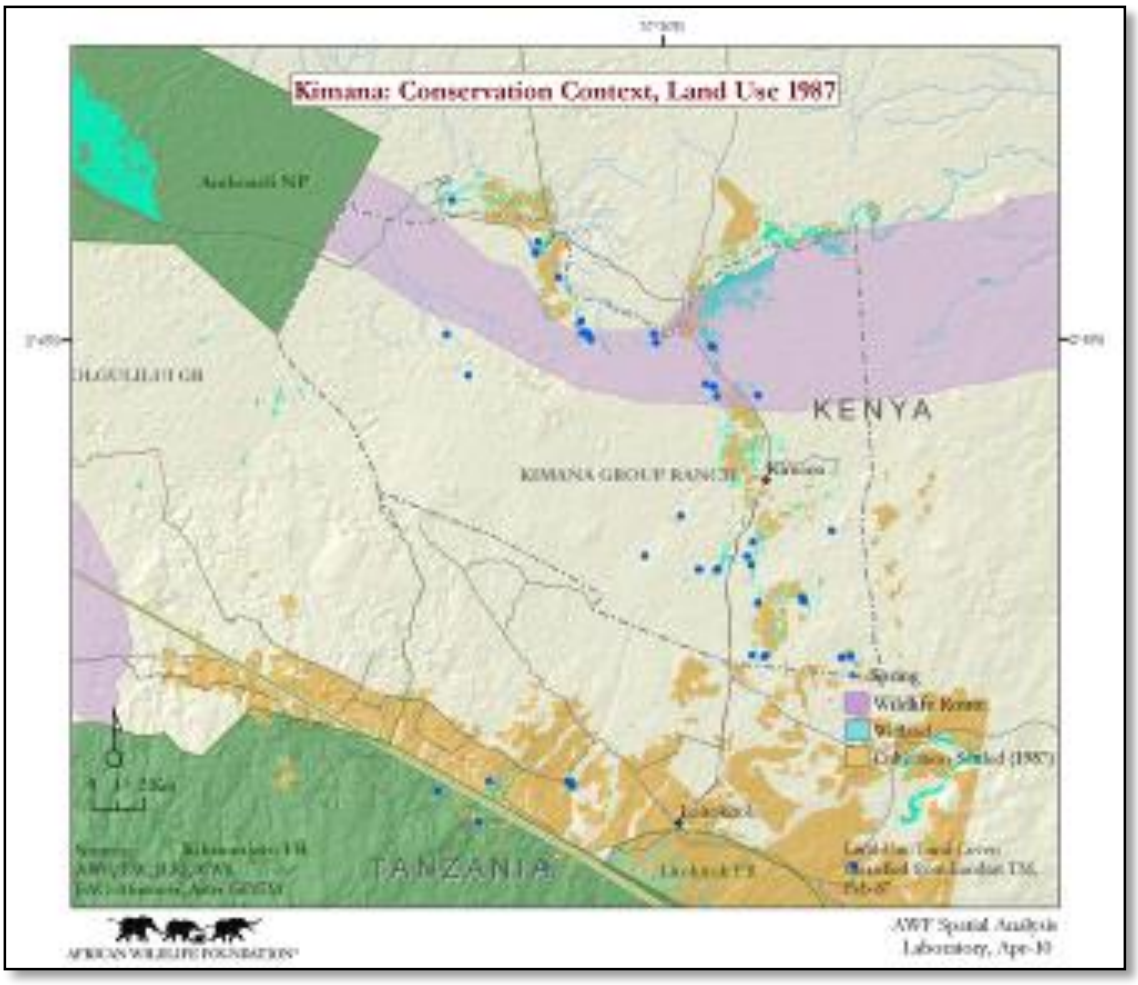

Figure 2: Amboseli National Park, east-west wildlife linkage to Chyulu Hills National Park.

Threat

One of the most severe threats to wildlife in the Amboseli Ecosystem is habitat fragmentation and loss due to land sub-division and land-use change (Western, et al. 2009). The Kimana Group Ranch located on the east side of ANP has been sub-divided into 60-acre lots allocated to individual owners. The sub-division of land is primarily due to: a breakdown in communal systems; failure of the group ranch system to deliver equitable benefits and improve livelihoods to communities; and socio-economic changes such as a more sedentary way of life, which is in part a response to government policies prescribing a sedentary lifestyle. As a result, landowners of the sub-divided parcels are selling their lots for development, speculation and agriculture, which is significantly fragmenting the landscape and resulting in habitat loss and blocking wildlife movement. The fragmentation of the east-west dispersal area between Amboseli and Chyulu Hills National Parks puts the eco-system at risk. It also starkly highlights that if community members do not benefit meaningfully from the conservation of habitat, they will seek other alternative land uses that

generate more income, most of which are highly incompatible with wildlife movement in the landscape and also put their pastoralist way of life in jeopardy.

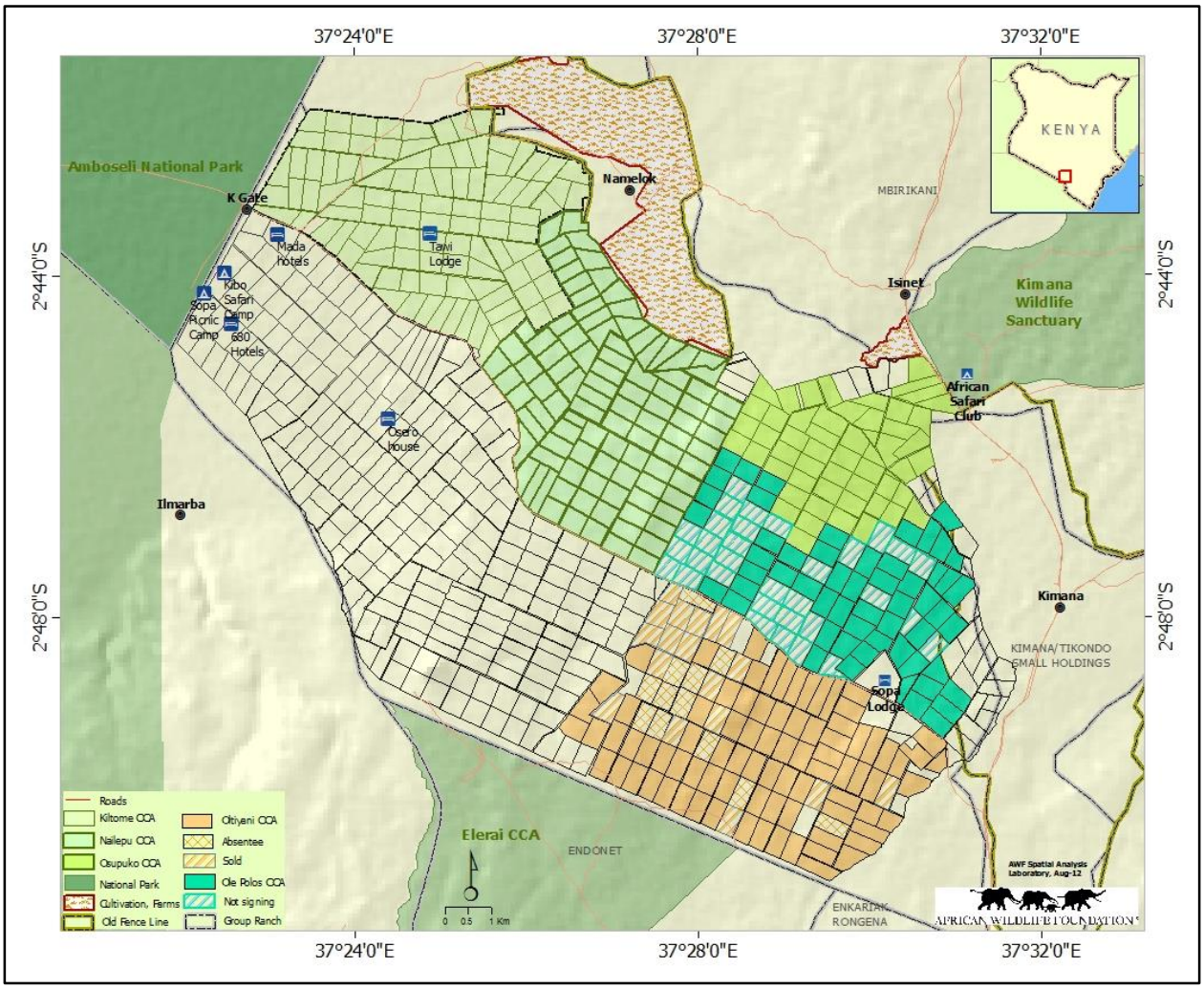

Figure 3: Sub-division of Kimana Group Ranch.

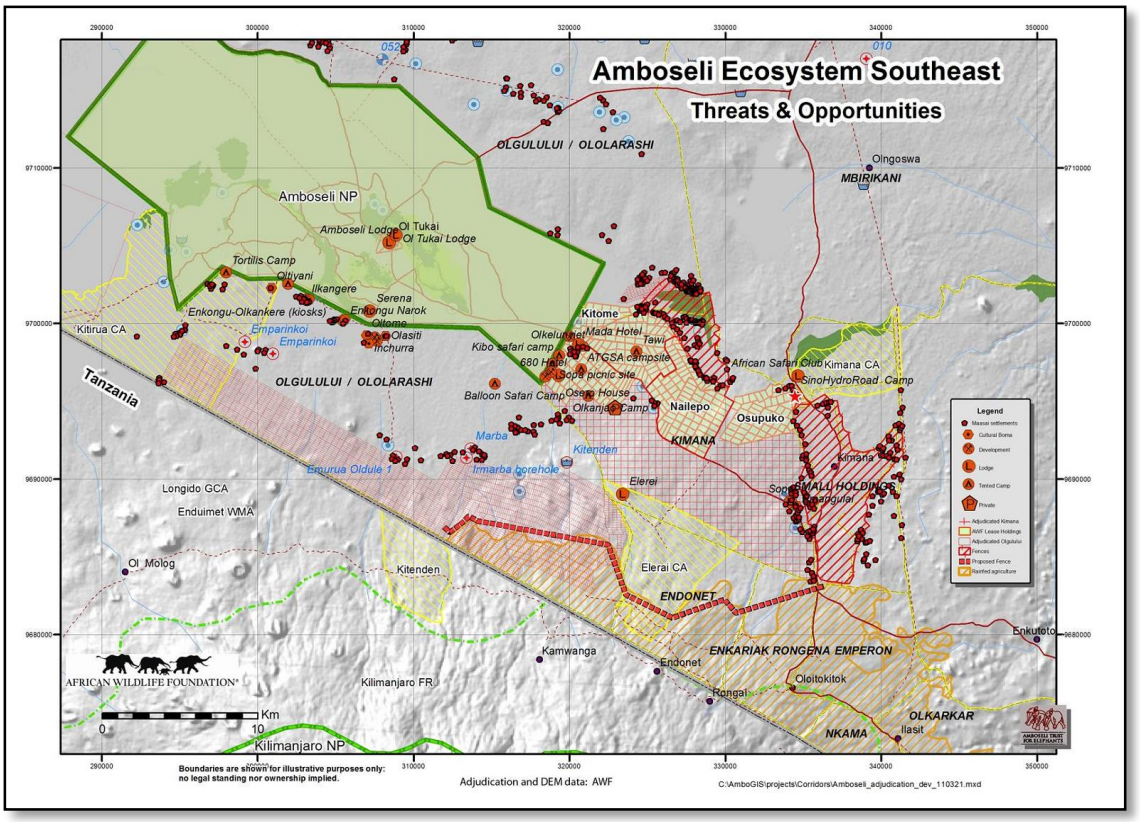

Figure 4: Lodge Development adjacent to Amboseli National Park. Source: AET.

Payment for Ecosystem Service Lease Program

AWF's conservation goal, in collaboration with landowners and partners, is to protect the dispersal areas and wildlife linkages around ANP. Given the rate of land use change in Kimana Group Ranch, AWF determined this area to be the most threatened and therefore prioritized the land stretching between ANP and Kimana Community Wildlife Sanctuary.

AWF completed a detailed assessment of the land, land tenure, historical and current use and consultations with community members, which revealed that that a Payment for Ecosystem Service through a lease program was the most appropriate mechanism for securing the land. The Amboseli Ecosystem is already a cash economy and community members were very explicit in their desire to have household direct payments. In 2008 AWF launched the conservation lease program with landowners in the Kimana Group Ranch. The objectives for the lease program are to:

- Contribute to the viability of ANP as core wildlife habitat by protecting scientifically documented and strategic dispersal areas outside the Park.

- Provide competitive incentives directly to landowners and individual community members for keeping their land open and passable to wildlife.
- Prevent the conversion of land from open rangeland to agriculture or development and prevent the fencing and over-grazing of the land.

Recognizing the collective value of land, the landowners formed landowner associations. This enabled them to make collective decisions while retaining and benefitting from their individual land ownership. These landowner associations range in size, from 50 landowners to 100 landowners. Five associations were formed, including over 340 individual landowners. Through these associations, AWF engaged the landowners in a discussion about conservation leases and PES.

AWF piloted the program with fifty landowners. The lease agreement was presented to the community in a series of community meetings with the landowners in the field, at a central location in their community. Women, youth and men participated in these meetings. These meetings were held in the local dialect, Kimaasai, with translations as needed into Swahili and English.

The conservation lease outlines the purpose of the lease, the term of the lease, land use restrictions, retained rights, payment requirements, how violations will be addressed and other relevant parameters. The purpose of the conservation lease is to 'provide habitat, dispersal and movement areas for wildlife' to help 'connect conservation areas' and to 'contribute to the survival of wildlife area in the Amboseli ecosystem as well as the continued existence of ecotourism as a means of poverty reduction and economic development and overall public benefit by ensuring that wildlife species endure for the benefit of future generations.'

The conservation lease prohibits: new infrastructure development, fencing, logging, mining, dredging, agriculture, resource extraction, non-tourism related commercial activity, and illegal taking of wildlife. Grazing is permitted in compliance with a management plan that followed the signing of the conservation lease. AWF used a process whereby local and indigenous communities had the option to accept or oppose the program, were fully briefed on the program components in their native language and exercised their voluntary rights, in keeping with Free and Prior Informed Consent as outlined in the Akwe Kon Voluntary Guidelines endorsed by the Convention on Biological Diversity.

Valuation and Payment

Ecosystem services have a range of values, which are generally classified into two groups: ecological benefits/values and socio-cultural benefits/values, some of which can be captured through economic valuation (it is disputed whether intangible values are fully captured through economic methods). The concept of Total Economic Value (TEV) is generally accepted as the framework for mapping the values associated with ecosystem services. TEV consists of two main types of values: use values and non-use values, which are then further classified.

The market is the most widely adopted mechanism for determining the use values of goods derived from ecosystems (crops, fuel wood) and may be a way of determining the non-consumptive use values from a system (e.g. tourism and recreational values). But many service functions of ecosystems are not traded in a market, making it necessary to set a price through other methods including: avoided costs, replacement cost, factor income, travel cost and hedonic pricing. (De Groot, et al. 2002)

In this case, there is no "biodiversity market;" therefore, AWF established the Willingness To Pay (WTP) or Willingness To Accept compensation (WTA) for the availability or loss of these services. (De Groot, et al. 2002) AWF did a market assessment of other leases, mainly for tourism and agriculture, in the region and based its payment on the average value for comparable lands, adjusting comparable lands to the subject land that was to be leased.

AWF started lease payments at 500 KES /acre with an annual increase of 2.5%-3%. The leases range from five years to fifteen years. One of the greatest challenges with community conservation programs is the delivery of benefits in an equitable manner. Often community financial benefits are given to a committee and do not reach individuals or households. Given that the landowners wanted direct payment, and each landowner in the lease program has a letter of allotment and/or title with no prior claims or title issues, AWF agreed with the community that payment would be made to each landowner directly through electronic transfer to individual bank accounts. AWF helped landowners to set up bank accounts.

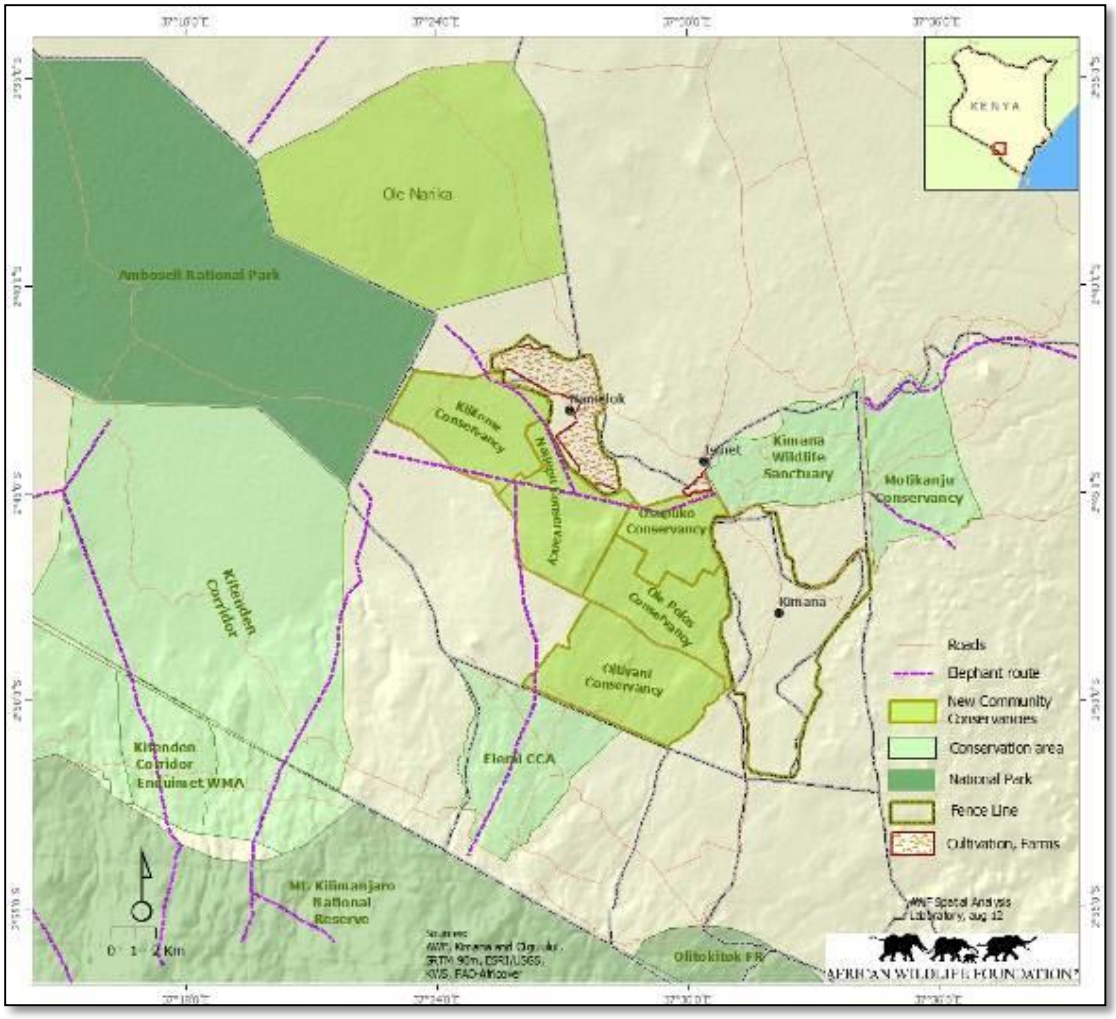

Figure 5: New Community Conservancies, and Kitenden corridor, established through the PES program.

As per the lease, payment is made directly to their accounts through wire transfer every six months. If there is a violation of the lease, AWF retains the right to withhold payment. Currently there are five community conservancies and one corridor established through the lease program. This includes over 1150 individual landowners and protects approximately 28,000 acres of critical wildlife habitat. With an average household of seven in this landscape, the lease program is directly benefitting over 9200 individuals; this does not include employment beneficiaries. As noted prior, one of the greatest challenges of community conservation across Africa has been getting benefits to have a meaningful impact at a household level. This program achieves impact at a household level and instilled the value of banking money for the future.

The conservation lease program is entirely voluntary. There are landowners adjacent to the conservancy who chose not to participate in the program. This is a risk to the overall sustainability of the program

because if these landowners practice incompatible land uses next to the conservancy it will have a negative impact on the integrity of the conservancies.

Sustainability

One of the challenges with PES programs is sourcing the funds to pay. Finding sufficient funds is a challenge both to the replication and expansion of the lease program. While the concept of buyer and seller is straight-forward, finding willing buyers is a challenge. In many cases, buyers have not had to pay for ecosystem services; therefore, instilling the need to pay can be challenging. To support the program, AWF raised funds from private foundations, Government Grants, and private sector tour operators. In the Kenya Wildlife Service (KWS) 2008-2018 Amboseli Ecosystem Management Plan there is specific reference to the need to support community conservancies outside the Park, to protect the dispersal areas outside the Park, and to provide direct conservation benefits to communities. The KWS Board of Directors approved the payment of the lease program as part of the implementation of this commitment. If Kenya established a PES fund, this program could be replicated in other regions. AWF has been approached by a number of landowners interested in a PES program but has had to decline because of lack of funding.

Community Conservancy and Trust, Zambia

AWF has worked in the trans-boundary landscape of Kazungula since 2000. This landscape includes Zimbabwe, Zambia, Botswana, and Namibia covering an area of 90,000 km^2. The landscape includes important protected areas such as Hwange National Park in Zimbabwe and Chobe National Park in Botswana, as well as iconic natural features such as Victoria Falls and the Zambezi River. This region hosts a diversity of wildlife, including the largest population of elephant in Africa, approximated at 150,000.

While the protected areas in this region are vital ecological anchors, land outside these parks and forest reserves must be protected. AWF assessed elephant movement throughout the landscape and identified priority trans-boundary wildlife corridors. Historically, wildlife, in particular elephants, have moved between the five countries (including Angola). A number of well-known elephant corridors have been identified by scientists, including Elephants Without Borders. One of these corridors extends from Namibia into Zambia across the Zambezi River onto the Sekute communal land area. The land along the Zambezi River is being developed rapidly by large-scale farms, fencing, tourism and housing and land conversion all of which block wildlife movement. This southern part of Zambia once hosted a wide array of wildlife;

however, these numbers have declined significantly. AWF aims to help restore wildlife populations in this region through the conservation of corridors and key conservation areas.

A majority of the land in the Kazungula landscape is customarily owned, such as the Sekute land. With customary land, community leaders have the authority to allocate community land and/or access, such as to a tourism operator. This may be done through informal agreement with the Chief (traditional leaders in Zambia) or through a lease via the Commissioner of Lands. Leasehold land is then alienated from customary lands. If the Chief allocates land via a lease, this land is alienated in perpetuity. There is a history of poor land allocation by Customary authorities, where investors take advantage of the land tenure situation and develop in a way that does not benefit the communities. In addition, there is also a history of customary authorities allocating land without informing the wider community thereby excluding them from decision making, benefits and alienating communal lands. The Chief may or may not share proceeds.

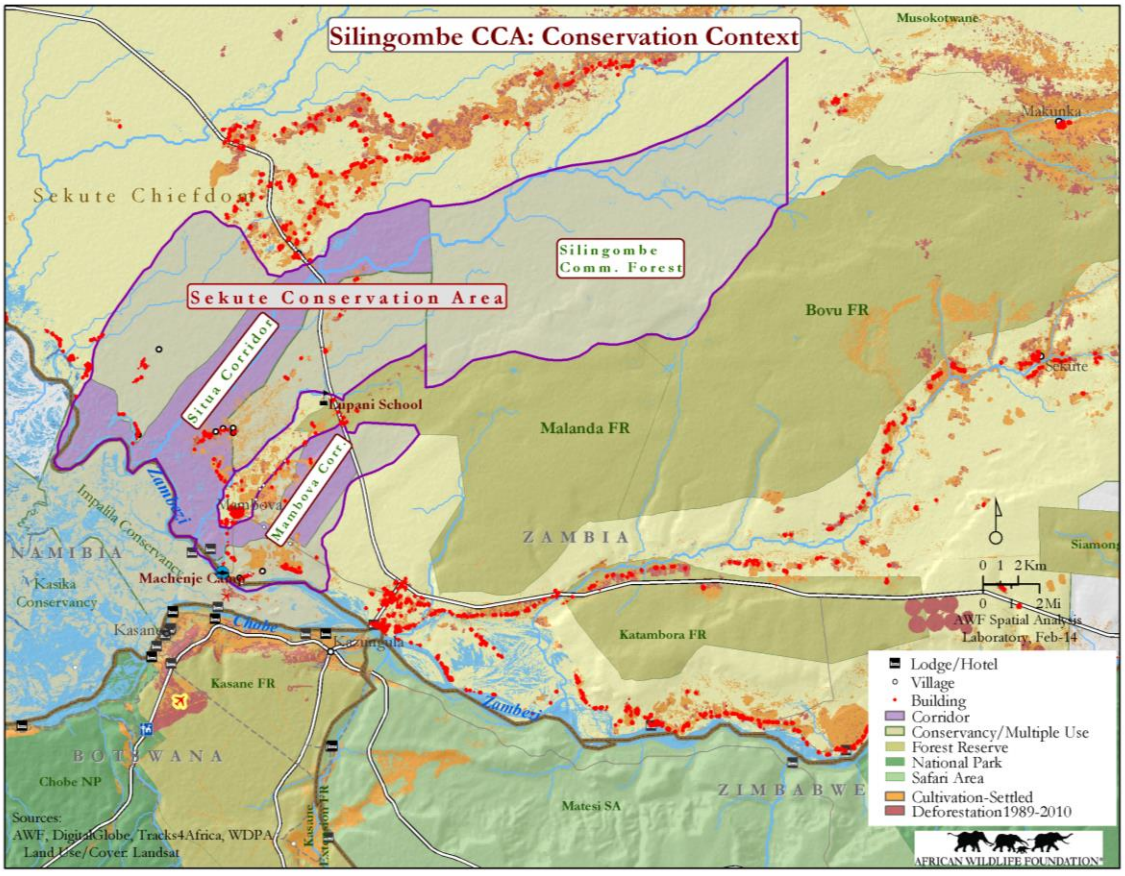

Figure 6: Sekute Conservation Area, Zambia.

When AWF assessed approaches for working with the Sekute Chief and the broader community to protect wildlife corridors and other target areas on the Sekute land, it had to consider the customary land dynamics. The Sekute Chiefdom covers an area of 250,000 hectares and is home to an estimated 17,500 people, 2,900 households, and 289 villages. (Metcalfe, 2005) Given the importance of the wildlife corridor on Sekute Chiefdom land, AWF piloted the establishment of community driven structure, a trust, through which the community was engaged and empowered to protect the corridors and wildlife and secured conservation based benefits. This devolution process led to the establishment of the Sekute Community Development Trust. The Trust is governed by democratically elected Board Members as enshrined in the Trust Constitution and by-laws while the Chief remains as the Patron of the Board. The Trust was conveyed via leasehold community land; therefore, the Chief conveyed governance of community land to the broader community. All community members have the right to be members of the Trust giving members the ability to participate in decision making around land management as well as financial benefits. The Chief continues to be the ultimate authority on communal land, but through the establishment of the Trust he broadened governance and decision making authority.

Working through the Sekute Community Development Trust, AWF signed a Conservation Agreement with the Trust leading to the community setting aside approximately 40,000 hectares of land for conservation, which includes the Silingombe Community Conservation Area (20,000 ha) and two key corridors that connect to the Conservation Area. The Conservation Agreement stipulates the purpose of the agreement, land uses restrictions, management, monitoring and violation procedures. AWF built an office for the Trust, hired and trained and equipped 18 scouts who operate with the protected area authority, Zambia Wildlife Authority, to patrol the Community Conservation Area and the corridors. AWF constructed a modern primary school, and equipped it with all the necessary teaching aids, and sponsors students in Secondary school through its easements for education program. In order for the community to ensure continued access to conservation benefits, AWF brokered a partnership between the Sekute Community Development Trust and a private sector partner to establish a sport fishing camp on Sekute Trust land and along the Zambezi River. AWF provided financial support for the camp construction capital as part of the community equity in the business venture. Further the Trust intends to develop a high value wildlife breeding sanctuary in the conservancy. AWF is assisting the community in securing a private sector partner and will help broker the partnership. From these two joint business ventures, the community through the Trust will receive financial benefit, a percentage of revenue and a lease fee, as well as other benefits such as employment and market for produce and other enterprise options.

The establishment of the Sekute Trust establishes a solid precedent for broadening land management and decision making governance to communities on communal land. This enables communities to enter into agreements without the risk of alienating their land.

Maringa-Lopori-Wamba Land Use Agreements, Democratic Republic of Congo

The Maringa-Lopori-Wamba (MLW) landscape is located in the Equateur Province of the Democratic Republic of Congo (DRC). AWF has worked in this landscape for over 10 years. The landscape encompasses 74,000 km^2 of lowland rain and swamp forest in north-central DRC and covers the four territories of Basankusu, Bongadanga, Djolu, and Befale. The ecological value of the landscape is very high and globally significant as this area comprises a sizeable portion of the Congo Basin forest ecosystem and is home to diverse and important species including the endangered bonobo, giant pangolin, golden cat, forest elephant, Congo peacock, and many other rare primates, amphibians and reptiles. The landscape has an extremely diverse avifauna and abundant fisheries. The greatest threat to this landscape is forest conversion, slash and burn agriculture, commercial and illegal logging, and the bush meat trade. The landscape has three protected areas – the 3,625 km^2 Lomako-Yokokala Forest Reserve, which was officially gazetted in 2006, and the 628 km^2 Luo Scientific Reserve and 1,100km^2 Iyondji Faunal Reserve gazetted in 2012. AWF working together with communities and protected area authority of DRC, *Institut Congolais pour la Conservation de la Nature* (ICCN), established Lomako and Iyondji.

The landscape is home to approximately 0.8 million people, most of whom depend on natural resources to meet their basic needs, including food, fuel, medicines and building materials. These rural populations are very remote lacking road access, power and running water. This area of DRC was severely impacted during the six year civil war and remains one of the poorest and undeveloped regions in the country.

While forests dominate over 90% of the landscape, a quarter of these forests are swamps and floodplain forests (or forested wetlands) reflecting the landscape's low relief and high rainfall (>1900mm annually). Human-dominated areas—mostly farms and plantations--comprise less than 8% of the landscape.

The urban centers throughout the landscape influencing economic activities are Lisala, Bumba, Boende, and Bokungu. Road infrastructure between towns is very poor, and passage is feasible only by motorbike. Villages are found stretched along the major road axes, with agriculture spreading out along the roads with concentration in the neighborhoods surrounding centers of human habitation. The agricultural activities practiced in the landscape are primarily for subsistence, with little opportunity for cash crops given lack of

access to markets. Cassava, maize, and peanuts are the main agricultural products. The formerly active industrial plantations of palm oil, rubber, and coffee have mostly been abandoned. Bush-meat is a core part of the local diet and economy with surveys indicating that hunting pressures on wildlife populations, including primates, are extremely high, with increased off-take in former logging concessions and in areas of high slash and burn activity.

Given the expansive area AWF saw a need for overall macro-level land use planning and zoning to address threats to wildlife populations and habitat conversion. At the time (2009) this had never been done in DRC. AWF entered into agreement with the *Ministère de l'Environnement Conservation de la Nature et Tourisme* (MECNT) to embark on a macro-level land use plan for the landscape. AWF's ultimate objective was to ensure an informed participatory macro level plan was developed and adopted by the Government. AWF convened a land use plan steering committee consisting of key ministries involved in land uses, agriculture and rural development, land management, MECNT, provincial authorities, and national and international NGOs. The area was officially recognized by the Government as a pilot land use planning area. AWF worked with the committee to assess ecosystem type, population, natural features, land use, wildlife and infrastructure. AWF utilized satellite imagery, GIS technology and participatory methods to zone the landscape. The various zones included: protected areas, timber concessions, settlement/agriculture and community land. The zonation was validated by the *Comite National de Pilotage du Zonage Forestier* (CNPZF) and approved by a ministerial declaration, the first of its kind in DRC. (Nackoney, et al. 2012)

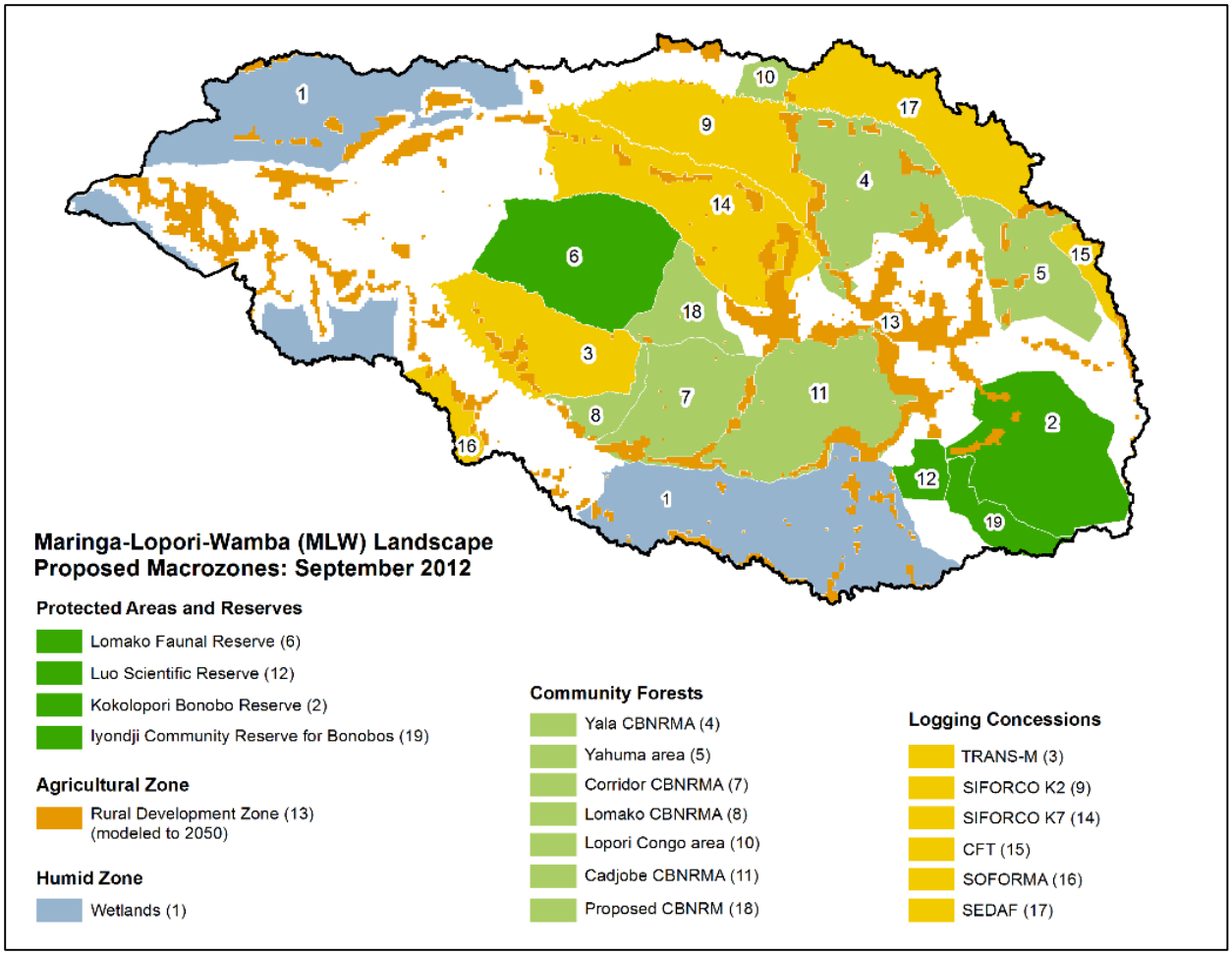

Figure 7: MLW Macrozones (2012), accepted and approved by the Government of DRC.

After approval of the macro-level planning, AWF embarked on a micro-level planning exercise in the target communal area near Djolu. This exercise looked at permanent and non-permanent forest, the two forest classifications in DRC. The non-permanent forest should cover enough land for development of the rural complexes according to projected population growth and the permanent forest should cover enough forest to support biodiversity and provide non-timber forest products (NTFP) for the local community. AWF worked with communities to zone areas for agricultural production and settlement and forest conservation. This process is entirely participatory with the community. Communities demarcate the zones together and agree upon boundaries and land use. AWF entered into 60 Memorandum of Understandings (MOU) with communities that stipulated certain land use agreements in the different zones. Approximately 243km^2 of land was demarcated for non-permanent forest (agriculture/settlement) zoning and approximately 1458 km^2 of forested land was demarcated for permanent forest zonation.

In exchange for setting aside forest land for conservation and not poaching bush meat, as stipulated in the MOU, AWF assisted the communities with agricultural improvements, so that farmers could generate more produce on their farms. One of the major barriers for community members is access to markets. AWF manages a barge and provides access to farmers participating in the program, so that they can sell their produce in Kinshasa. Since 2010, the barge has carried approximately 1,325 tons of agricultural products from the landscape to the markets in Kinshasa—products that would not have made it to the markets without the river transport initiative. The number of farmers accessing the river transport has increased over the last three years. In 2012, 800 farmers utilized the boat to access markets for their products, providing increased economic activity to more than 40,000 individuals in the agricultural-based communities. To add to the agricultural and market benefits, AWF is also developing a state of the art school in the landscape, at the request of the community.

To supplement the various economic developments in the landscape, AWF is developing a REDD+ (Reducing Emissions from Deforestation and Forest Degradation) project to protect the forest that links to protected areas, enhance forest management on CBNRM areas, and provide economic benefits for communities.

Conclusion

If Africa is going to protect its biological diversity in the future, creative conservation tools such as easements, leases, payment for ecosystem services, community trusts and binding land use plans are needed. While a system of large, well-managed protected areas are critical for long-term conservation, these must be complemented by conservation efforts on community and private lands in order to achieve the scale required for Africa's mega fauna and the connectivity needed for climate adaptation.

AWF has tested and pioneered many of these tools for the first time in Africa and found that land conservation tools require strategic conservation planning, full community and landowner awareness and voluntary participation, a fair payment for the ecosystem service and clarity around land tenure. Simultaneously, legal policies should be developed and supported to support innovative legal conservation and to provide incentives for communities and private landowners. While AWF has been successful in testing these legal mechanisms, the policy framework must be established country by country to incentivize landowners in conservation and to ensure the mechanism is upheld legally for long-term conservation sustainability. In addition, countries should establish a PES fund that provides financial support to landowners who adopt conservation mechanisms. Clear structure must be established on who manages the

fund, valuation procedures, terms of payments, violation procedures and minimum term period. Further recommendations are made in figure 8 below.

Conservation Tool	Application	Constraints	Legal Requirements	Recommendations
Environmental Easement	Good for long-term conservation of privately owned land	Explicit environmental easement legal framework required	Clear legal framework that enables voluntary environmental easements for conservation purposes	Easement legislation should be established enabling the voluntary use of easements for conservation purposes, legislation should stipulate that easement holders should be qualified third-party conservation organizations with the ability to monitor and uphold easements. A clear valuation process should be outlined using third party valuation mechanisms. Easements should be registered against title.
Conservation Lease / PES	Good for protecting habitat on defined properties and providing regular payment to landowners	Limited by the funding available for lease payments and ecosystem services	Commonly used legal tool in most countries, mainly used for tourism. Leases must be registered against title to be upheld; therefore, clear tenure required	PES legislation should be established, legislation should stipulate that the PES holder should be a qualified third-party conservation organizations with the ability to monitor and uphold PES agreements. A clear valuation process should be outlined using third party valuation mechanisms. Agreements should be registered against title.
Community Trust	Good for devolving NRM decision making to community level	Communities must have the capacity to manage trust, good governance and tools to make informed decisions	Must be established in a legal framework that recognizes rights at a trust level	Legal structure for trust should be established enabling communities to have decision making rights on natural resource management
Conservation Agreement	Good for protecting habitat on communal lands	Limited if not recognized legally	Clear legal framework that enables conservation agreements	Traditional law recognizes legal agreements between two parties. Wildlife related laws should recognize this conservation tool.

Land Use Plan	Good for planning land use across large areas and zoning for uses including conservation.	Limited in the amount of control over zones and ability for countries to monitor. Plans must be legally approved by Government and relevant Ministries (wildlife, agriculture, forest, physical planning, environment) should participate in the development and compliance monitoring	Need to be provided for in legal frameworks, including provisions for participation. Need by-laws for zoning and enforcement.	Land use plans should be codified in law and legally binding with clear monitoring frameworks and resolutions for violations and conflicts.

Figure 8. Land conservation tools application, constraint, limitations, and legal requirements.

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