

AWF CLIMATE CHANGE STRATEGY

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Mitigating the impact of climate change and building resiliency in Africa's human and natural communities

OVERVIEW

The African Wildlife Foundation (AWF) is an international conservation organisation working solely on the African continent. AWF's mission is to ensure that Africa's wildlife and wild lands thrive in a changing Africa. AWF implements conservation at the **landscape scale**, currently focusing its attention on 23 priority socio-ecological landscapes, found within sixteen different African countries. As Africa's only international African-led conservation organisation with over 50 years of experience developing **multi-stakeholder partnerships** that cross the conservation-development sphere, we are uniquely positioned to facilitate the design and implementation of holistic landscape-scale conservation approaches. Our conservation programmes are working to secure viable socio-ecological landscape mosaics that simultaneously deliver **climate change mitigation** and **adaptation at scale**, while delivering biodiversity conservation outcomes and contributing to enhanced food security and livelihood opportunities.

AWF stresses the critical role large landscape-scale conservation in Africa can play in maximising climate change adaptation and mitigation outcomes. The overall goal of AWF's climate change strategy is to seek holistic solutions that can effectively respond to the complexities of land use demands within a rapidly modernizing African continent, while ensuring the beneficial roles of ecosystem-based solutions are maximized in ways that manage trade-offs at the landscape level between competing resource user groups. Our ultimate goal is to **conserve up to 38 priority landscapes** in ways that maximize opportunities for **climate change mitigation** and ensure the **long-term resilience of people and wildlife** in the **face of global climatic change**.

THE AWF APPROACH

Climate change is the greatest challenge humanity will face in the coming generation, and is predicted to become the biggest single driver of biodiversity loss over the next 50–100 years, larger than loss of habitat, over-exploitation, and introduction of invasive species. While Africa contributes the least carbon emissions of any continent, it is believed to be most vulnerable to its consequences because of expansive aridity, reliance of the majority of the population on natural resources, the emphasis

on natural resource-based development, high levels and prevalence of poverty, and limited resources available to cope with impacts.

AWF acknowledges the severity and complexity of climate change and has identified five priority areas of work with the overall aim of mitigating the impact of climate change and increasing the **resilience** of landscapes, wildlife and people.

1. Building knowledge and adaptive management capacity.

AWF is working to increase our understanding of the projected impacts of climate change on the dynamic landscapes within which we operate. AWF is using and developing climate risk and vulnerability assessment tools that can effectively and rapidly assess the likely impacts of climate change on habitat, wildlife and people, and integrating these in our landscape conservation approach and strategies. AWF is using scenario planning tools and multi-stakeholder dialogues to identify areas of vulnerability, conservation targets and barriers to and options for sustainable adaptation for people and wildlife, along with options for adaptive management and transformative change at scale. Through these processes we are also working closely with government partners to improve knowledge of critical climate impacts, landscape level trade-offs and possible solutions for management and policy development.

AWF is working with partners to build capacity to adopt ecosystem-based adaptation¹ and mitigation approaches, and improve capacities to access and transparently manage climate finance.

AWF's work has particularly focused on aiding partners' participation in forest conservation, forest carbon markets and strengthening forest policy frameworks, including participatory forest management.

2. Help communities adapt to the impact of climate change.

Across Africa communities are already facing the impact of climate change. AWF works with communities to increase their resilience to enable them adapt to climate change. Interventions include water capture and storage, diversification

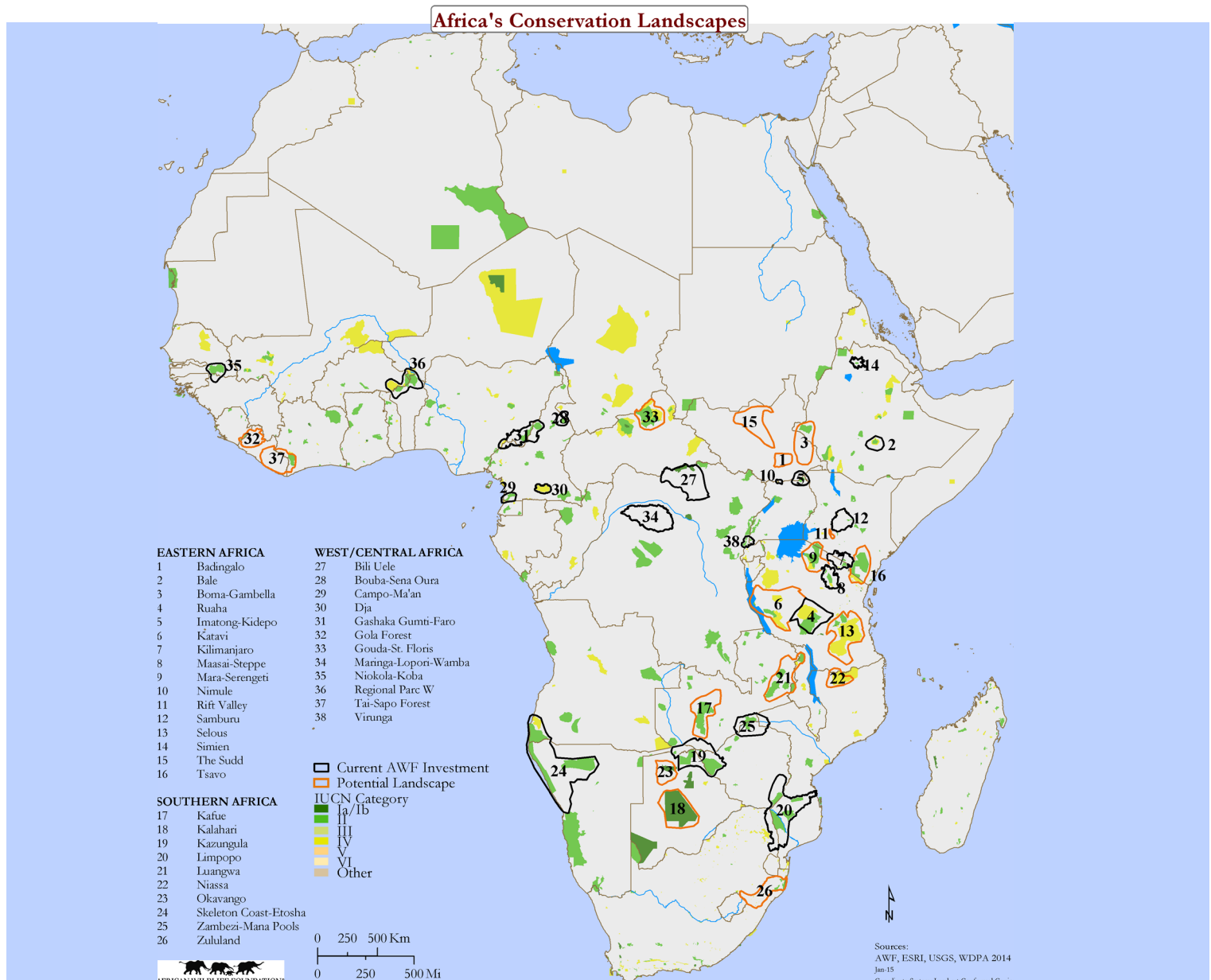


Figure 1: AWF Priority Conservation Landscapes and Strategy

of and alternative livelihoods, climate smart agriculture, riparian corridor restoration, early warning systems and information sharing and access to innovative technologies such as fuel efficient stoves, solar power, and biogas. AWF is working with communities across Sub-Saharan Africa to enable them to adapt to the impacts of climate change.

3. Promote landscape scale conservation approaches.

Large landscape conservation offers the best opportunities for adaptation. AWF supports ecosystem-based adaptation by working to protect networks of conservation land within large landscapes that can support climatic species shifts and natural processes into the future. AWF's landscape conservation

programme also enhances ecosystem services² vital to human wellbeing and reduces the vulnerability of natural resource dependent people. AWF identified 38 large priority conservation landscapes that can, among other factors, thrive in a changing climate provided the trade-offs between competing uses are addressed through sound resource management decision making at the landscape level.

4. Mitigate terrestrial carbon emissions through landscape scale conservation.

Avoided deforestation and degradation and other measures to ensure terrestrial carbon sequestration play a significant role in climate change mitigation and forest conservation. AWF has long supported the conservation of tropical and dryland forests has worked to engage and empower forest

¹ Ecosystem-based adaptation is the use of biodiversity and ecosystem services as part of an overall adaptation strategy to help people to adapt to the adverse effects of climate change (IUCN). ² Ecosystem services: benefits people receive from functioning, intact ecosystems. Benefits may include clean food, water, and air as well as regulating services such as flood and disease control. (Millennium Ecosystem Assessment).

dependent communities in forest conservation. AWF strongly supports the formalisation of a global carbon market, which will create transparency and equity in pricing and payments, and will reward countries and communities that prioritize forest conservation and social benefits along with carbon sales. The design of avoided deforestation projects can create synergies with adaptation and ecosystem resilience objectives and AWF's forest conservation programs are designed in a way to alleviate the drivers of deforestation through innovative solutions.

5. Ensure financing mechanisms create the right incentives.

Significant investment is needed in climate change mitigation, adaptation and monitoring in Africa. AWF encourages those designing the financing mechanisms to ensure they adequately encourage sustainable ecosystem function, reward sound conservation practice, ensure funding is available in a transparent mechanism for implementation at the landscape level and deliver equitable benefits to local people.

1. OVERVIEW

Our planet is warming more rapidly than has ever been recorded before and climatic instability is increasing, particularly in terms of rainfall patterns. Historical records confirm warming of approximately 0.7°C over most of Africa during the 20th century and scientists expect further increases over Africa of between 0.2°C per decade (low scenario) and more than 0.5°C (high scenario), significantly greater warming than the global mean predictions. Under the status quo scenario, these changes are expected to accelerate over the coming decades, though regional changes will vary greatly. For example, parts of East Africa have already shown observed warming of over 2°C over the last 50 years.³

There is global scientific consensus that this temperature change is largely driven by consistently elevated levels of heat-trapping gasses in the atmosphere generated principally by carbon emissions from fossil fuel combustion and conversion of forests. Most historic and current carbon emissions stem from fossil fuel consumption, notably in the industrial, transport and buildings sectors, yet an estimated 20% of emissions are due to deforestation, meaning that the management of natural forest systems, cannot be left out of climate change responses. While northern countries have benefited largely from the development gains represented by past carbon emissions, economic development in southern countries, and notably those in sub-Saharan Africa, could be severely constrained or undermined by climate impacts. In historical or current volumes, Africa consumes a small share of the world's fossil fuels. However, with steady population increase and rapid development across Africa, and the increasing scarcity of cheap fossil fuels, it is critical for development partners to support Africa's rapid transition towards sustainable green economic growth. This strategy paper outlines the African Wildlife Foundation's Climate Change Programme in Sub-Saharan Africa.

Mitigation by African Ecosystems

The role of natural ecosystems in climate change mitigation was first recognized at the Conference of Parties to the United Nations Framework Convention on Climate Change (UNFCCC COP16) in Cancun, Mexico, with strong anticipation of 'Reduced Emissions from Deforestation and/or Degradation' (REDD) being formally adopted at COP 17 in Durban, South Africa, and financed as a legitimate national level mitigation strategy within UNFCCC, and its eventual full integration into an international agreement. AWF strongly encourages the adoption of a regulatory carbon market framework so as to unlock the potential of REDD+ as a viable mechanism for protecting forests and providing benefits to forest dependent communities.

Understanding Climate Change Impacts

Predictive climate change models for Africa suffer from having limited background data on existing climate variability and relationships to social and ecological vulnerability, and therefore are less confident as to where and who will be most affected. This is an important constraint to the development of appropriate adaptation strategies.

According to the Millennium Ecosystem Assessment predictions, climate change will be the biggest single driver of terrestrial biodiversity loss over the next 50–100 years, larger than loss of habitat, over-exploitation, and introduction of invasive species. It is projected that in Africa 25–42% of plant species will lose their habitat by 2085 and 10–40% of mammals will fall within the critically endangered or extinct categories by 2080. Climate change will alter species habitats, forcing attempts to shift ranges and migration patterns. Some species will be unable to evolve or shift their range quickly enough to persist; others will decline in number significantly.



³ cf. Adaptation at Scale in Semi-Arid Regions East Africa RDS report <http://www.assar.uct.ac.za/east-africa-0>.

Temperature rises are associated with increased climate volatility, including more frequent extreme conditions such as droughts and floods. Competition for natural resources between humans and wildlife will accelerate.

In Africa, climate modellers predict that the direct impacts on biological systems will include rapid changes to hydrologic regimes; altered precipitation patterns involving increases in dry periods for most areas; more rapid desertification; sea level rise yielding increased coastal erosion; and the dramatic disappearance of glaciers. Indirect impacts include freshwater stress and scarcity; saline water movement inland; coral bleaching; and decreases in ecosystem productivity.

An elevated sea level is expected to swamp many coastal areas in low-lying countries, and, in the process flooding once fertile agricultural fields and displacing people. Already salt-water contamination during the dry season has been observed 80km upstream of the Zambezi River and up to 120km upstream of the Gambia River. The likely scale of impact of all these changes on ecosystems and the human populations they support will be monumental.

Climate change-driven impacts on socio-ecological landscape systems pose major threats to livelihoods in Africa, and will/do affect the poor disproportionately. People will be and are already impacted directly by a growing number and frequency of extreme events including floods, droughts and storms, as well as by the negative impacts of biodiversity losses and degraded ecosystem services. The unpredictability of

weather patterns alone already puts the livelihoods of rural Africans at great risk. Large segments of the population will face growing risk of disease and increased food insecurity, livelihood vulnerability, especially for those dependent on agriculture. As many lack the resources to adapt to these stresses, the consequences will be dire.

The decline in ecosystem productivity and related loss of species and biodiversity will have dramatic impacts on key economic sectors including agriculture, fisheries and tourism. Agriculture contributes 30–40% of Africa's GDP and occupies approximately 65% of the population. Some Sahelian and southern African countries are projected to suffer reductions in agricultural yield of up to 50% with small scale farms hit hardest. Pastoralism, as practiced across two-fifths of Africa's land mass and under extensive mobile conditions is broadly compatible with sustainable resource management, will be hit hard by desertification, prolonged droughts, and increased competition for resources. One fifth of Africa's endemic fish species occur in eco-regions that may experience disruptions in discharge or runoff exceeding 40% by the 2050s. With declines in ecosystem productivity, provisioning ecosystem services will be significantly constrained in many socio-ecological natural resource-based systems, further undermining the resilience of subsistence livelihood activities that Africa's poorest depend on.

Climate change is taking place in a rapidly changing continent. Africa's economies, population and infrastructure are growing rapidly. This is putting unprecedented stress on the continent's natural resources. Africa is experiencing record high habitat loss and fragmentation. Add to these stressors climate change and parts of the continent are at an ecological tipping point putting the ecosystem services upon which humans and wildlife rely at great risk.

2. THE AWF STRATEGY

AWF recognises that it has a significant role to play in supporting and developing an African-led response to climate change. AWF's landscape-scale ecosystem based approach lends itself to practical and impactful adaptation and mitigation. Likewise, AWF's work to increase landscape resilience will help communities and wildlife adapt to the impacts of climate change.

2.1 Building knowledge and capacity to adapt in priority landscapes

Understanding the implications of climate change is critical in the design and strategic implementation of conservation programs. AWF has completed climate vulnerability and risk assessments in the Virunga Landscape comprising Uganda, Rwanda and DRC—home of the endangered mountain gorilla, a species vulnerability assessment for the Kilimanjaro landscape of Kenya and Tanzania and is in the process of completing a vulnerability assessment



⁴ IFPRI (2009)

⁵ Thieme, et al. (2010)



in the northern Kenya Samburu landscape. These species/habitat focused assessments help ensure strategic conservation interventions are targeted at areas identified with high risk and vulnerability. However, many species and biophysical vulnerability assessments fail to incorporate likely human response factors resulting in systematically biased assessments that could favour the implementation of inappropriate biodiversity management actions or poor prioritisation of viable sites for conservation under future climate change.⁶ AWF is working to address this knowledge gap and is coordinating a collaborative research programme which seeks to deepen understanding of climate vulnerability and adaptation of important socio-ecological landscapes in East Africa's semi-arid regions to help transform current adaptation practice to a mode that achieves proactive, widespread and sustained adaptation for both biodiversity and people at the landscape scale. This research will inform development of more effective adaptation strategies and approaches to assessing vulnerability of both people and wildlife to climate change. AWF incorporates climate information into its conservation strategies and landscape scale approach, as well as its adaptive management processes.

2.2. Help communities adapt to the impact of climate change

AWF believes that how effectively local human populations are able to adapt to climate change across landscapes is going to be our most challenging and important area of work over the coming decade. Across Africa AWF works with poor, rural communities that are vulnerable to climate change. AWF's priority is to enhance community resilience and to enable and encourage pro-poor and pro-conservation adaptation of resource management, resource use and livelihoods. AWF is implementing adaptation mechanisms throughout its various landscapes.

Following are a few examples of how AWF works with rural communities to increase their ability to adapt to climate change. In northern and southern Kenya AWF is working with pastoralist communities to help them adopt water catchment mechanisms. These water catchment systems enable households to capture water on site and minimizes the time women use to collect water; thereby, enabling them to dedicate time to other activities that may further increase their resiliency. In southern and central Tanzania AWF is helping communities intensify agriculture and adopt climate smart practices. Across Africa, AWF is working to increase revenue to communities through wildlife based tourism. AWF has a diverse and solid portfolio of tourism facilities across Africa that result in added revenue to communities, increased capacity of community associations and spin-off businesses. In southern Kenya AWF is working with pastoralists to improve land use and add value to livestock through market linkages. In Kenya and Tanzania, AWF trained women on the development of fuel efficient stoves. The stoves reduce the number of trees harvested and the women generate money from selling the stoves.

2.3. Promote landscape scale conservation approaches

Science clearly demonstrates that one of the best approaches to adaptation is large landscape conservation. AWF has identified 38 priority large landscapes across Africa with sufficient intact ecosystems and regional connectivity to sustain ecological viability and resilience in the face of climate change and is working in 23 of them across 16 countries. For example, in Cameroon, AWF is working in the Dja Faunal Reserve to protect the landscape and ensures the maintenance of the vital ecosystem services it provides to wildlife and humans.

The protection of wildlife corridors and dispersal areas that enable species range shifts is another key priority for AWF. For example, in southern Kenya in the Kilimanjaro landscape, AWF is working to protect wildlife corridors that help connect a network of conservation lands.

⁶Segan et al. (2015)

2.4. Mitigate terrestrial carbon emissions through landscape scale conservation

AWF believes that avoided deforestation and degradation and other measures to ensure terrestrial carbon sequestration can play a significant role in climate change mitigation and forest conservation. AWF strongly urges the formalisation of a global carbon market. AWF has a long history and is active in forest conservation across Africa, including tropical forest and dryland forest. AWF has a long history of forest conservation. For example, for the past ten years, in the Maringa Lopori Wamba Landscape in the Congo Basin, AWF was actively engaged in community forest conservation and created two faunal reserves protecting critical tropical forest. In Zambia, AWF worked with communities to protect Miombo woodlands. In southern Kenya, AWF is working with communities to protect acacia woodlands in community owned conservancies. Carbon sequestration through good rangeland management has and will continue to be a priority for AWF.

AWF is actively working on three carbon mitigation projects in DRC, Kenya and Tanzania. AWF's project in southern Kenya, the Chyulu Hills REDD+ Project, was validated through VCS and CCBA. AWF's Kondoia Irangi REDD+ project in Tanzania was validated by the Plan Vivo Foundation. Our project's location and design in each case created synergies between biodiversity conservation, mitigation and adaptation. For instance the forest protected by

the Kenyan and DRC projects help sustain wildlife movement and ecological connectivity, while the Tanzania REDD+ project protects the headwaters of the Tarangire River, a critical water source for the northern Tanzania tourism circuit.

2.5. Get the financing mechanisms right

Significant investment is needed to enable sustained adaptation and mitigation at scale in Africa. AWF encourages decision makers to design climate financing mechanisms that ensure adequate consideration is given to the role sustainable ecosystem management and sound conservation practice can play in delivering widespread, sustainable and equitable adaptation benefits to local people. We encourage greater investment in programmes that can generate new learning to clearly understand the full potential role, limits and trade-offs associated with sustainable adaptation and mitigation options, particularly those focused on terrestrial ecosystems and natural resource dependent societies in Africa. AWF is also working to ensure that local communities within Africa's most important conservation landscapes have the knowledge and skills to equitably and transparently participate in climate finance decision making processes at the local level, whilst encouraging decision makers to establish mechanisms that facilitate community participation in the design of mitigation and adaptation measures.

3. REFERENCES

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