AU-IBAR
Climate Change
Adaptation-Mitigation Strategy
for Animal Resources
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The AU-IBAR
Climate Change Adaptation-Mitigation Strategy for Animal Resources
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ABBREVIATIONS AND ACRONYMS

AfDB  African Development Bank
ALive  Partnership for Africa Livestock Development, Poverty Alleviation and Sustainable Growth in Africa
AMU  Arab Maghreb Union
AU  African Union
AU-IBAR  African Union - Interafrican Bureau for Animal resources
CAADP  Comprehensive Africa Agriculture Development Programme
CAHOSCC  Committee of African Heads of State and Government on Climate Change
CCAA  Climate Change Adaptation in Africa
CEN-SAD  Community of Sahel-Saharan States
CILSS  Permanent Inter-State Committee on Drought Control in the Sahel
COMESA  Common Market for Eastern and Southern Africa
COMIFAC  Central African Forest Commission
DFID  Department for International Development
DREA  Department of Rural Economy and Agriculture
ECA  Economic Commission for Africa
ECOWAS  Economic Community of West African States
EU  European Union
FAO  Food and Agriculture Organization of the United Nations
GCOS  Global Climate Observing System
GEF  Global Environment Fund
GHG  greenhouse gas
GTZ  Deutsche Gesellschaft für Technische Zusammenarbeit
IGAD  Intergovernmental Authority on Development
ILRI  International Livestock Research Institute
ITC  International Transhumance Certificate
KARI  Kenya Agricultural Research Institutes
MDG  Millennium Development Goal
NAP  National Action Programme
NCB  National Coordinating Body
NEPAD  New Partnership for Africa’s Development
NGO  Non-governmental Organization
OSS  Sahara and the Sahel Observatory
REC  Regional Economic Community
SADC  Southern African Development Community
SRAP  Sub-regional Action Programme
TPN3  Thematic Programme Network 3
UN  United Nations
UNCCD  United Nations Convention to Combat Desertification
UNECA  United Nations Economic Commission for Africa
UNEP  United Nations Environment Programme
UNFCCC  United Nations Framework Convention on Climate Change
USAID  United States Agency for International Development
WEMA  Water Efficient Maize for Africa
EXECUTIVE SUMMARY
Climate change poses serious risks to lives and livelihoods, particularly in Africa where poor farmers are the most vulnerable populations. The impacts of climate change may substantially delay or reverse progress towards achieving the Millennium Development Goals (MDG). In fact climate change is both a developmental and an environmental challenge. The two major parameters affecting developing countries are the changes of meteorological events on which agricultural production systems largely depend and the cost of environment friendly technologies and practices. The United Nations Framework Convention on Climate Change (UNFCCC) states that the largest share of historical and current global emissions of greenhouse gases (GHG) has originated from developed countries, while per capita emissions in developing countries are still relatively low. The developing countries’ share of global emissions will grow as they strive to meet their social and developmental needs. As a way of action, the UNFCCC proposed that all parties involved in climate change must formulate and implement national or regional programs containing measures to facilitate adequate adaptation to climate change.

Africa is attaching great importance to climate change related issues as witnessed by the series of policies and measures taken within their sustainable development strategies both at national and regional levels in response to climate change. Such policies and measures are positively contributing to the mitigation and adaptation to climate change. Sustainable natural resources (land, water and others) management and food security are inextricably linked with climate change. This explains why climate change is a key issue of all initiatives across the Comprehensive Africa Agriculture Development Programme (CAADP) pillars.

The African Union - Inter-African Bureau for Animal Resources (AU-IBAR) as the specialized technical office of the Department of Rural Economy and Agriculture (DREA) of African Union Commission is responsible for supporting and coordinating the utilization of animal resources (livestock, fisheries and wildlife) for both human wellbeing and economic development in the Member States Member States of the African Union. In line with this mandate, AU-IBAR is empowering the Member States of the African Union and Regional Economic Communities (RECs), with the vision of an Africa free from hunger and poverty in which animal resources contribute significantly within the global arena. AU-IBAR fully adheres to the principle, policies and directions of the UNFCCC process through supporting African Union Member States in their efforts to mitigate climate change and to efficiently adapt to the changing environment.
AU-IBAR is highly committed to play a significant role in supporting and developing an African-led response to climate change and hereby formulates a framework for climate change mitigation and efficient adaption to changing environment on the continent.

This document takes a series of steps to identify basic assumptions that are shared by governments and farmers over climate change issues, and then paves the way to mutually agreed conditions under which policy and actions could be built. This strategy revolves around six axes, as follows:

1. Development of a long term pathway through a challenging policy landscape to address effects of climate change on animal resources
2. Addressing climate change more effectively through better coordination
3. Building evidence base, awareness and advocacy for better understanding of impacts and consequences of climate change on animal resources
4. Supporting strategic partnerships and networking of national platforms for animal resources and climate change
5. Ensuring that technology, innovation and skills from climate change related research is of maximum benefit to animal resources.
6. Development and implementation of policies and regulatory/market-based mechanisms.

The objective of this strategy is to respond to climate change and make significant achievements in controlling its effect on animal resources, through enhancing the capability of continuous adaptation to climate change, promoting climate change related sciences, technologies and R&D to a new level, while markedly raising public awareness of climate change issues, and to further strengthen the institutions and mechanisms on climate change.

To achieve this, the strategy highlights the following as key issues and problems:

**Development of a long term pathway through a challenging policy landscape to address effects of climate change on animal resources**

In most cases in Africa, existing governance and institutional capacities are insufficient to deal with environmental degradation and disaster risks and that is exacerbated during periods of climate stress. Improving the governance and institutional capacities of animal resources and farming communities to increase their resilience to climate change, and particularly to extreme climatic shocks, is a key objective of such strategy.

Key interventions proposed:
1. Influencing policies on climate change related to animal resources in order to promote innovation processes to improve responses to climate variability and change in rural environments
2. Assisting in the reform of national policies on trade, institutional and governance issues that balance demand and supply and mainstream climate change adaptation in animal resources.

**Addressing climate change more effectively through better coordination of actions**

AU-IBAR is working with partners to create an enabling platform of coordination for Member States and RECs. It aims to help facilitate dialogue and coordinate joint actions by stakeholders within an African perspective, raise awareness on the need for Member States to contribute to the climate change debate at the international level, through stakeholder consultations at important meetings on the continental calendar.

Key interventions proposed:
1. In partnership with relevant institutions develop early warning systems and facilitate implementation of mechanisms supporting disease control, stocking/destocking/animal movement decisions, rangeland and crop management practices in agro-pastoralist systems
2. Develop and conduct stakeholder awareness raising campaigns (ALive platform, taking advantage of traditional knowledge) for communication and knowledge exchanges.

**Building evidence base, awareness and advocacy so that impacts and consequences of climate change on animal resources are understood**

The Thematic Programme Network III (TPN3) is a participatory and voluntary network involving a wide range of members, including countries, national institutions and local community groups. The leadership of the Partnership for livestock development, poverty alleviation and sustainable growth (ALive platform) could take a leading role to address the awareness constraint and promote the development of a common vision on the most important policies for a pro-poor and sustainable animal development in the African regions and sub-regions.

Key interventions proposed:
1. Take steps to encourage integration of fisheries and wildlife into national and international climate change agendas so as to secure space for fisheries and
wildlife in financial instruments that support both adaptation and mitigation
2. Inform ongoing international negotiations which are critical for the future of Africa animal resources sector
3. Support research institutions in documenting climate change evidence in production systems
4. Help deliver strong, coherent and effective messages to decision-makers on topics related to climate change.

Supporting strategic partnerships and networking of national platforms for animal resources and climate change
The partnerships will bring together key stakeholders (public, private and civic and voluntary sectors) across the region to drive efforts to tackle the causes and effects of climate change. It is the responsibility of the partnerships including integrating key adaptation work arising from Regional Adaptation Studies. The aims of the partnerships will be to help the continent to sustainably develop in continually changing climatic conditions and to provide leadership for joint activities on mitigating and adapting to climate change.

Key interventions proposed:
1. Provide direction and leadership on the effects of climate change on animal resources
2. Sensitize stakeholders to the risks and opportunities associated with climate change by creating a platform through which learning and communication among stakeholders can take place.

Ensuring that technology, innovation and skills from climate change related research are of maximum benefit to animal resources
The integration of new technologies from research and technology transfer systems potentially offers opportunities to further develop adaptation strategies to climate change.

Key interventions proposed:
1. Encourage participation from the private sector in the development of technological innovations that will support a low-carbon growth path for Africa
2. Focus on projects that will assist with mitigation and adaptation to climate change and address specific areas of animal resources.

Development and implementation of policies and regulatory/market-based mechanisms
Under a global climate change regime, market-based approaches have the potential to significantly reduce the costs of addressing climate change challenges and increase the feasibility of achieving long-term reductions in carbon emissions required to address the risks of climate change.

Key interventions proposed:
1. Enhanced competitiveness of the animal sector through provision of animal-based public goods
2. Design policies and instrument frameworks that effectively leverage capital and know-how to effectively address climate change related to animal resources.
1. CONTEXT

1.1. Climate change and animal resources in Africa

Climate change is a major threat to sustainable growth and development in Africa, and the achievement of the Millennium Development Goals. Climate change represents perhaps the greatest environmental and political challenge the world has faced to date because it requires innovative global governance approaches. Projections suggest that, by the end of the 21st century, climate change could have had substantial adverse impacts on agricultural production and consequently on the capacity to produce food and reduce poverty. Africa faces considerable challenges arising through economic, demographic and environmental stresses; including climate related stress such as droughts, floods and water scarcity. Scientific evidence shows that Africa is likely to be the continent most adversely affected by changes induced by climate change and it has been estimated that there will be a drop in agricultural yields by as much as 50 percent by 2020. While the consequences of climate change are most apparent and severe in Africa, the continent contributes by far the least to the problem.

Animal production systems (pastoral, agro-pastoral, smallholder mixed crop-livestock and commercial) in Africa are characterized by rapid change, driven by various factors including population growth, increases in the demand for livestock products as incomes rise, urbanization, changes in lifestyles and environmental changes. The combination of increasing temperatures, irregular and unpredictable rainfall amounts and patterns, floods and drought, land degradation and desertification are real challenges with adverse effects on animal production and productivity. The consequences of climate change on animal resources include heat stress on pastures and rangelands, low and unpredictable rainfall leading to their degradation. Increased ambient temperatures also induce reduced feed intake by animals resulting in poor animal performance. Consequently, it causes food insecurity and conflict over scarce resources. For fisheries, the negative manifestations of climate change include changes in sea level, flooding and storm impacts leading to coastal erosion (infrastructure), disappearance of fishing villages, disruption of fishing activities with declining
Coastal erosion as seen in Sierra Leone which adversely affects marine fisheries and fishing communities

The likely impacts of climate change on animal and animal systems are on water (floods and unavailability) and feeds (unavailability and losses of valuable pasture and fodder genetic resources), animal genetic resources and breeding (loss of both adapted and high performance breeds) and animal health (anaezotic outbreaks, enzootic and arthropod borne diseases, emerging and re-emerging diseases). In all cases, climate change has direct and indirect effects on animals. The direct effects of climate from rises in ambient temperatures, relative humidity, wind speed, unpredictable rainfall and others, have impacts on the animals’ physiological status and related stresses which will impact on adaptation mechanisms. Indirect effects include unavailability of feed and water resources in a continent where most production systems rely on natural climatic cycles and resources. These pose critical constraints on animal production in most of the regions in Africa. It has been estimated that the livestock sector is responsible for 18 percent of the global warming effect. Livestock contribute 9 percent of total greenhouse gas emissions measured in CO₂ equivalents. These emissions are mainly caused by the digestive processes of ruminants where CO₂ and methane are produced. Changes in land use, deforestation to create arable land also contribute to climate change. However, smallholder livestock systems have in general much less environmental footprints when compared with large scale commercial livestock production due to low inputs and the traditional production system of animal mobility to reduce pressure on resources.

In mixed farming systems, livestock provide a hedge against the risks from seasonal crop failures as they add to the diversification of production and income sources. Livestock play a critical role in agricultural production through the provision of draught power and manure. While the use of draught animal is declining in other parts of the world, there is continuing widespread use in sub-Saharan Africa. In areas where mixed crop-livestock farming is practiced, continued use of animal traction can contribute to higher levels of production and output. The integration of livestock and crops also allows for efficient utilization of crop residues and by-products as animal feed and the use of animal manure as organic fertilizer for crops.

Traditionally, selection of local breeds has been based on their adaptive traits, but market driven thrusts have increased demand for high producing exotic breeds. However, these breeds are generally not adapted to local conditions. The need to take advantage of adaptive traits of indigenous animal genetic resources in marginal systems in which climatic and other environmental shocks are more frequent, cannot be over-emphasized for these marginal areas. However, the dependence on adapted local breeds is increasingly under threat due to the higher demand for increased levels of production, combined with changes in land-use. Under these circumstances, ensuring continued availability of these adapted animal breeds to meet the needs of an uncertain future is crucial. The challenge will be to balance between the need for high production and maintenance of breeds with requisite adaptive traits and this can be achieved. There will always be a need to improve productivity as demand will most likely increase while natural resources like water and feed are dwindling.

Conservation should be considered as an important component of a broad-based strategy to preserve valuable adaptive genes and genetic traits that have demonstrated their capacity and sustainability for centuries. One of the most important traits of tropical the most important resistance traits have
been for trypanotolerance in African ruminants and helminthes resistance, particularly in certain breeds of sheep. The major impacts of climate change on livestock diseases have been on vector-borne diseases. Increasing temperatures have promoted the proliferation of vector populations into cooler areas, often into higher altitude systems (tick-borne diseases). The same has been observed in fisheries, were climate change appears to be increasing the prevalence of disease. Changes in rainfall patterns also contribute to vector proliferation during wetter years leading to large outbreaks of disease sometimes in areas they are not expected. The wide distribution of tsetse flies in sub-Saharan Africa is known to be an important limiting factor for livestock production (ruminants, equids, and pigs). Tsetse flies are sensitive to environmental change, either due to climate or direct human impacts on habitat. Beyond vector-borne diseases, helminthes infections, particularly those of small ruminants are widely influenced by changes in temperature and humidity. Climate change could also indirectly influence disease outbreaks following movement of animals especially when lack of water necessitates congregation of, for example, camels and small ruminants around watering points with the likely effect of increased incidence of parasitic infections and diseases.

Mixed species utilization of resources

Adapted African animal genetic resources should be conserved at all costs

Given the increasing economic benefits from wildlife, health issues are of increasing concern especially where epidemics and chronic disease problems occur as a result of introduced diseases. More than 70 percent of disease agents, listed by the Office International des Épizooties (OIE) infect wildlife. Those include Rinderpest, Foot and Mouth Disease, African swine fever, Theileriosis, Brucellosis and Bovine tuberculosis (BTB). Policies in Africa on interface disease issues have often been controversial. One problem is a lack of basic field data, in relation to disease, on the interactions at the livestock-wildlife-environment interface. Elsewhere, the understanding of livestock-wildlife diseases is improving and better tools for conducting research in health issues are now available, mainly due to the progression in molecular biology. This, coupled with improved techniques of monitoring the environment with remote sensing and the application of easily comprehensible reporting systems using geographical information system (GIS), make it theoretically possible for decision-makers to promote better policies for animal health management and sustainable resource use. However, in Africa the need for disease surveillance is well recognized but this has not been prioritized. Generally, wildlife veterinary units are poorly funded and disease surveillance is still rudimentary or nonexistent in most wildlife populations. Lack of knowledge about wildlife diseases and their infection dynamics invariably hampers attempts to control, prevent, or eliminate those diseases that threaten human health and biodiversity. Studies

Wildlife is an integral part of the ecosystem
have indicated that increased temperatures may have both positive and negative impacts on fisheries and aquaculture productivities. Higher fish catches have been reported with rising sea surface temperature in the Indian Ocean. In the freshwater environments, warmer climate and increased water temperature in lakes and fish ponds potentially increase growth rate of farmed species (e.g. cage and pond culture of tilapia) and thus resulting in positive effects. Climate change may also be beneficial to small pelagic species populations due to wind driven coastal upwelling that may intensify with global warming and in turn increase the turnover of nutrient rich bottom to the surface.

1.2. The needs for a continental response strategy

AU-IBAR is interested in the climate change debate for three main reasons, which illuminate the potential contributions to be made. Firstly, climate change is likely to be one of the main challenges that humankind will face in the current century. Africa is one of the most vulnerable continents to climate change and climate variability, a situation aggravated by the interaction of ‘multiple stresses’, occurring at various levels, and low adaptive capacity. Secondly, AU-IBAR’s goal is to provide leadership in the development of animal resources for Africa. By supporting and empowering the African Union Member States and the Regional Economic Communities (RECs), AU-IBAR’s vision is of an Africa free from hunger and poverty in which animal resources make a significant contribution within the global arena. AU-IBAR with its past experience is a key player in addressing specific development challenges and optimizing responses to climate change at the local, regional and continental level. Thirdly, it is important to engage in partnerships that will encourage dialogue, cooperation and exchanges on concrete and effective actions to respond to climate change. Consequently, over the last couple of years, AU-IBAR has increasingly focused its attention on climate change issues culminating in the establishment of “Climate change and sustainable natural resources management” as an operational theme. Several projects were developed and the AU-IBAR participated in a number of workshops on effects of climate change on the continent. AU-IBAR was unanimously selected as the focal point for coordinating programs on rational use of rangelands and fodder development. The Thematic Programme Network No III (TPN3) offers a strategic entry point into the AU institutional framework to contribute towards the implementation of UNCCD at various levels of the respective National, Sub-Regional and Regional Action Programmes and Action Plans of the New Partnership for Africa’s Development (NEPAD). The Addis Ababa Workshop in 1998 agreed to the creation of a network involving various stakeholders for the management of rangelands and development of fodder crops.

The issue of how Africa should participate in public debates on animal issues such as policy on climate change has emerged as major topics of discussion. The need for a continental climate change policy was identified as an urgent requirement during the preparations of the 15th ALive Executive Committee Meeting in April 2010 in Addis Ababa, Ethiopia. During the meeting a position paper titled “Is there a future for the African livestock production systems in the context of globalization and rapid environmental degradation” was distributed and shared with all participants to obtain the requisite background to the policy formulation process. The need to produce an action-oriented response strategy document rather than a specific policy white paper on livestock and climate change was clearly identified during the meeting. The strategy is to broadly support the policies and principles laid out in the Member States documents on the environment as well as other national policies including those relating to agriculture including animal production, fisheries and wildlife.

Climate change is a cross cutting issue that can affect the entire economy as well as many specific sectors including energy, transport, agriculture, forestry, water resources management and health. A continental climate change response strategy will promote integration between the programmes of Member States involved in order to maximize benefits to the continent, while minimizing negative impacts. Further, since climate change response actions can potentially act as significant factors in boosting sustainable economic and social development, a continental strategy specifically designed to bring this about is clearly in Africa’s interest, supporting the major objectives of Member States including poverty alleviation and attainment of health.

It has been recognized that one of the most effective ways to address impacts of climate change on the poor is by incorporating adaptation measures into sustainable development and poverty reduction strategies. It is also important
to mainstream climate change. The concept of mainstreaming climate change refers to the full integration of climate change adaptation and mitigation policies into national development programs. Some of the challenges that might hinder mainstreaming of climate change include: 1) national priorities biased towards more pressing and immediate concerns, 2) pervasive lack of awareness on the impacts of climate change to sustainable development, 3) lack of special funding mechanisms to support climate change adaptation and mitigation initiatives, 4) lack of clear partnerships, 5) lack of expertise on governance and limited resources to support the actions, 6) lack of scientific data and information for adequate understanding of climate change issues and the impacts on the continent. Successful mitigation of climate change requires effective actions at all levels. The success or failure of mitigation schemes is often dependent on overcoming these problems or at least acknowledging their existence.

1.3. Structure of the strategy document

AU-IBAR has mainly been driven by efforts to fulfill its leadership role in the development of the animal resources mandate including supporting the African Union Member States and the RECs. There is growing consensus that adaptation to climate change in the short to medium-term is perhaps best framed within the context of overall risk management and enhancing resilience. A risk management approach is an effective way to bring the issues associated with climate change to the fore-front (“here and now”). Helping decision makers to understand and deal with current climate variability could provide opportunities to find solutions and options to these challenges. Nevertheless, adaptation is constrained by the institutional, social, economic and political environments in which people operate, and these constraints need to be addressed in any comprehensive risk management approach. AU-IBAR is aware that an African Strategy cannot be implemented without the support of all of its Member States. Therefore, AU-IBAR is developing a continental strategy to raise awareness of the impacts of climate change on animal resources and the actions Member States can take.

This strategy is premised around six axes, as follows:

1. Development of a long term pathway through a challenging policy landscape to address effects of climate change on animal resources
2. Addressing climate change more effectively through better coordination
3. Building evidence base, awareness and advocacy for better understanding of impacts and consequences of climate change on animal resources
4. Supporting strategic partnerships and networking of national platforms for animal resources and climate change
5. Ensuring that technology, innovation and skills from climate change related research is of maximum benefit to animal resources.
6. Development and implementation of policies and regulatory/market-based mechanisms

An effective response to climate change should focus on adaptation and mitigation as well as mobilizing finance and technology transfer to promote opportunities that would lead to consistent impacts and advance Africa’s development goals.

In the first part of the document, the nature of climate change is introduced and the changes that can be expected to happen in a physical sense, on animal resources are explored. This leads on to the justification for regarding climate change as a serious challenge for animal production and setting the scene for a continental approach. The international, regional and national commitments on climate change are reviewed and the specific vulnerabilities together with the possible consequences of climate change are examined.

In the second part of the document, key issues and problems related to response in animal resources to climate change in Africa are examined. The various adaptation and possible mitigation options are explored, with emphasis on those actions likely to result in sustainable development. The strategy is presented including the guidelines, principles and objectives.

Issues previously presented are addressed in the third part of the document, by proposing a number of strategic objectives, interventions and a list of key actions. The main conclusions of the report which highlight the priority areas of the strategy are then given.
2. INTERNATIONAL, REGIONAL, SUB-REGIONAL AND NATIONAL COMMITMENTS FOR CLIMATE CHANGE

The primary means for advancing global climate change is through negotiation of multilateral agreements. International, regional, sub-regional and national organizations, should initiate and facilitate progress towards achieving commitments for combating climate change through various types of activities, such as convening international conferences, summits, expert meetings and workshops, providing technical and financial assistance to countries, and building capacity and raising awareness. In addition to multilateral agreements, a number of declarations and plans of action are required to advance the climate change agenda. Although these texts would be of a non-binding legal nature, they nevertheless represent important moral obligations for Member States and RECs to implement them.

2.1. International Commitments

Until about the year 2000, climate discussions focused mainly on mitigation. Since then, adaptation to climate change is increasingly recognized as a necessary complementary measure to mitigation. G8 countries began to discuss the impacts of climate change in Africa in Evian (2003) and action plans were agreed to. Progress in the implementation of G8 Commitments has been modest. Actions were taking place outside the G8 context on global greenhouse gas (GHG) emissions. At its January 2007 Summit, the African Union highlighted the scale of the problem and called for an urgent international response. The African Union raised climate change adaptation as a key priority and looked for more support for adaptation and better integration of climate related issues in developmental programmes. In March 2008, the European Union (EU) agreed to detailed action to reduce its GHG emissions by 20 percent from their 1990 level by 2020 (EC, 2010). Climate change was discussed again by the G8 at their 2008 Summit. In December 2008, parties to the UNFCCC met in Indonesia to begin discussions about the successor to the Kyoto Protocol when it expires in 2012. In December 2009 world leaders were convened in Copenhagen to negotiate the global framework to reduce emissions of GHG and accelerate efforts to adapt to the changes in the global climate that had by then become inevitable and apparent. During the meeting, African countries came with a Common Position and formulated several demands. The first demand stipulated was that of financial compensation for natural, economic and social resources that have been lost and the historical responsibility of developed countries on climate change in that respect. The second request was that the United Nations Framework Convention on Climate Change (UNFCCC) principle of common but differentiated responsibilities should be respected. The third demand from the African
negotiators was methodological: they wanted to keep the two track negotiations. This meant they wanted to keep the distinction between the Kyoto Protocol and the Convention. The fourth crucial issue in the Africa Common Position concerns the Bali Action Plan 6. This roadmap launched a comprehensive process to enable the full, effective and sustained implementation of the Convention through long-term cooperative action from 2007 to 2012 and beyond. The Bali Action Plan is centered on four main building blocks – adaptation, mitigation, technology and financing.

2.2. Regional Commitments

At the regional level, several programmes were developed. The Climate Change Adaptation in Africa (CCAA) research and capacity development program, supported by Canada’s International Development Research Centre (IDRC) and the UK Department for International Development (DFID), aims to improve the capacity of African countries to adapt to climate change in ways that benefit the most vulnerable. Building on existing initiatives and past experience, the CCAA program works to establish a self-sustained skilled body of expertise in Africa to enhance the ability of African countries to adapt. The Green Wall Sahara Initiative was initiated by the African Union (AU) in collaboration with ECA, FAO, UNEP, UNCCD, CEN-SAD and OSS. It was launched in December 2006. The African Heads of State and Government in their January 2007 Summit took the Decision on the implementation of the initiative. The Africa Union together with The United Nations Economic Commission for Africa (UNECA) and The Global Climate Observing System (GCOS) launched “ClimDev Africa”, an action plan on climate information aimed at mainstreaming climate information into decision-making for Africa development. The United Nations Economic Commission for Africa (ECA)-African Union (AU)-African Development Bank (AfDB) initiative on land policy in Africa aims at building consensus among key players in Africa on a vision of successful land policy/land reform. The New Partnership for Africa Development (NEPAD) Comprehensive Africa Agricultural Development Programme (CAADP) has been endorsed by African Heads of State and Governments as a framework for the restoration of agricultural growth, food security and rural development in Africa. Its objective is to achieve an annual agricultural growth rate of at least 6 percent in sub Saharan African countries by the year 2015. It also aims at enhancing food security by promoting programs designed to increase agricultural production, improve the nutritional value of staple foods, and ensure better access to food for vulnerable groups as well as improving land management practices.

During the September 2010 Conference in Addis Ababa, Ethiopia the African Union Commission (AUC), in partnership with strategic regional and international partners, hosted an Africa-wide Conference on Agriculture, Food Security and Climate Change to enhance Africa’s preparedness. The outcomes of this conference included adoption of actions for strengthening agriculture in the climate change negotiations and enrichment of the CAADP-inspired AUC-NEPAD ‘Agriculture and Climate Change Adaptation-Mitigation Framework’. The need to have credible policies and programmes for agriculture which incorporate climate change, was reiterated during the interventions by the African Ministers that participated in the Conference. The 14th Ordinary Session of the AU Assembly held in Addis Ababa in 2010, has adopted decisions in which the Committee of African Heads of State and Government on Climate Change (CAHOSCC) was requested to establish a streamlined single negotiating structure at the Ministerial and Expert levels to replace the current coordinating mechanism. The AU Commission has engaged the new Chairman of the African Group of Technical Negotiators in consultations with a view to facilitating the implementation of this particular decision as well as more generally on the significance of strategizing the coordination efforts towards the COP in Cancun, Mexico. The outcome of the special session on climate change of the African Ministerial Conference on the Environment held in Nairobi in May 2009, resulted in a declaration on the African process for combating climate change, the African common negotiating position on a comprehensive international climate change regime beyond 2012 and a conceptual outline of a comprehensive framework of African climate change programmes. The Commission was represented at the first climate change negotiation sessions in 2010 of the Ad hoc Working Group-Kyoto Protocol (AWG-KP) and Ad hoc Working Group-Long Term Cooperative Actions (AWG-LCA) that took place in Bonn, Germany, in April 2010. During this meeting some changes from the developed country parties were observed as regards the main two tracks of negotiations, namely the KP and LCA, which may facilitate a fair global agreement in Cancun.

2.3. Sub-regional and national Commitments

Implementation of the strategy rests at the sub-regional and national levels. At national level, ratification of the UNFCCC and Kyoto Protocol was done by African countries. They have demonstrated their commitment to mitigate the impacts of climate change by ratifying the UN Framework Convention on Climate Change and the Kyoto Protocol. Early warning and monitoring systems have been put in place by several governments to reinforce early warning by providing relevant information to promote pro-active measures and preparedness. African countries through the support of development partners are at different stages in developing
and implementing their National Action Programmes to combat desertification (NAPs). The NAPs provide strategies for specific land and drought-related plans and programs, and serve as important tools in guiding implementation, donor coordination and monitoring of efforts in combating desertification and poverty reduction. National Coordinating Bodies (NCBs) have been established in accordance with UNCCD provisions. Their role is coordination, guidance and leadership to ensure cross-sectoral and integrated planning for desertification control activities. Several governments have enforced laws that will curb illegal cutting of indigenous forests or clearing of wetlands. Some governments are supporting biotechnology research on the development of crops and animals that are tolerant to changes in temperature, rainfall regimes, disease, and water stresses through national research institutes, as is being done in Kenya through the Kenya Agricultural Research Institutes (KARI).

At sub-regional level, the Sub-regional Action Programmes (SRAP) and the Regional Action Programme (RAP) on drought and desertification have been undertaken in Africa. These programmes complement the NAP, particularly in the management of trans-boundary resources and crosscutting sub-regional issues such as information collection and dissemination, capacity building, and technology transfer. Presently, the four SRAPs being implemented under the auspices of sub-regional institutions include: the Permanent Inter-State Committee on Drought Control in the Sahel (CILSS, West Africa); the Economic Community of West African States (ECOWAS) including Chad; the Intergovernmental Authority on Development (IGAD, East Africa); the Arab Maghreb Union (AMU) for North Africa, including Egypt; and the Southern African Development Community (SADC) for southern Africa. These institutions focus on drought and the food security issues resulting from drought, the SRAP for central Africa is under the auspices of the Central African Forest Commission (COMIFAC). The Sub-regional environment action plans have been developed for all five sub-regions. These programmes provide a framework for environmental management in the sub-regions and complement existing regional and national plans on environment. The plans focus on regional actions to deal with issues including drought, desertification and sustainable land management.

3. **EFFORTS INVESTED AND ACHIEVEMENTS ON MITIGATION AND ADAPTATION TO CLIMATE CHANGE**

Development of farming communities has involved a continuous process of adapting to changing stresses and opportunities. Due to adequate strategies, pastoral communities have in the past exhibited resilience to elements of climate such as droughts, floods among other catastrophes. A wide range of possible adaptation or coping strategies exists including technological changes to increase or maintain productivity, learning from other experiences, appropriate policies and investments in specific infrastructure to respond to needs and risk reduction strategies, which may increase the adaptive capacity of poor animal keepers. Many of these strategies have been experienced in Africa.

3.1. **At regional and national scales**

At regional level, there were displacements/relocations of animal herds from arid and semi-arid zones, mainly to the sub-humid zones and many agreements were signed between Member States to facilitate such movements along transhumance corridors. For example, for the legislation to support cross-border animal mobility in the Common Market for Eastern and Southern Africa (COMESA), the ECOWAS Decision in Abuja in October 1998 agreed to provide a regional framework for cross-border transhumance between fifteen Member States. The decision authorized cross-border transhumance in respect of certain conditions, the main of which was the granting of an International Transhumance Certificate (ITC). In Ethiopia’s arid and semi-arid areas, drought is very common that pastoral communities Konso in the southern region had to develop strategies to cope. This covers a wide range of indigenous soil and water conservation practices including physical structures, agronomic measures and agro-forestry strategies. Strong grassroots institutions are also part of the communities’ resilience strategies, enabling the communities to experiment with new innovations. Marginalization of these traditional institutions increases the vulnerability of the communities. Migration and separating herds are also two common means of coping with climatic variations. In West Africa, herders are increasing their mobility and splitting herds, with women and children being tasked to care for goats and sheep, while men move long distances in search of water and rangelands. In other areas, value addition to animal products, such as hides and skins, and exploitation of other resources, such as honey, fisheries, is helping many to cope and retain traditional standards and lifestyles. Pastoralists in Central Sudan or in the Afar and Ogaden regions of Ethiopia are moving into camel and goat keeping rather than maintaining cattle herds. At the local level, new feeding approaches are used, leading to the adoption either of new feeds, or other strategies of rangeland management.
3.2. Structural interventions

Structural interventions usually seek to rehabilitate the productive capacity through improvement of processes, institutions and/or policies to enable sustainable development of the population’s assets. The principal governance issue has always been, and remains the access and control of natural resources. Building social capital and bridging relationships between groups and across institutions is central to forging consensus within rural civil societies. In most pastoral areas, community organizations and local non-governmental organizations are important, especially where they are influential in advocating and influencing user rights to access to available resources in these communities. The importance of governance systems has been well documented in Kenya, in terms of structural issues, where only 4.1 percent of the pastoral community, can access health centers within 1 hour walking; 57 percent walk for more than 6 hours to access the nearest livestock and crop produce markets. Traditional knowledge and practices are widely used in coping with climate change and variability. Pastoral societies have a right to utilize local resources that sustain and protect their livestock, a key asset that contributes significantly to the pastoralists’ ability to produce food and maintain standards of living that support them. Livelihoods and water interventions, such as destocking and digging and rehabilitating wells and boreholes, respectively, have contributed to saving lives and strengthening pastoralists’ resilience. For example, the Greater Horn of Africa, by equipping communities with the ability to manage and respond to shocks in the early stages of a crisis, strategic livelihoods interventions have allowed for more timely and appropriate responses to disasters than is possible with typical emergency relief assistance. Enabling pastoralists to claim their rights and participate in decision-making at policy level is important because policies and institutions influence the ability of livestock owners to use their assets to support their livelihoods. Given the complexity of livestock and crop-livestock systems, inevitably a mix of technological, policy and institutional innovations is required.

3.3. Science and technology

New technology can provide important coping solutions. Technological innovation is one of the answers to helping African livestock farmers cope with the increasing challenges posed by climate change. It is expected that action-oriented research approaches will yield a range of options for adaptation to climate change. At present, NEPAD through CAADP, has prioritized agriculture in four themes: sustainable land and water use, markets and infrastructure, food security, research and technology adoption, with countries expected to commit at least 10 percent of national budgets to agriculture. Technological developments, such as the development and promotion of new crop varieties, improvements in water and soil management, animal and rangelands management systems (feed and nutrition, genetics and breeding), and improved animal health technology environmental management options, have been used in several parts of Africa. These technological developments have demonstrated the ability to reduce pressure on natural resources while improving animal productivity and production. These options have been used in various combinations with varied degrees of success. Methods on improved farm management practices to increase soil fertility and moisture retention have also been tested. In some countries, new traits of crops and varieties which farmers have traditionally cultivated could be adapted to the current environment threatened by climate change. These varieties have reduced requirements for pesticides and they also contribute to reduced carbon emissions by decreasing pesticide use and infield applications. Since a substantial proportion of the GHG produced by agriculture are attributable to the production and application of nitrogen fertilizer alone, breakthroughs in increased efficiency of nitrogen use will substantially mitigate emissions in agriculture. The Water Efficient Maize for Africa (WEMA) Project was launched in March 2008, by the company Monsanto. The project is based on a public-private partnership to develop drought-tolerant maize varieties for Africa. It is expected that during moderate drought, the new varieties are expected to increase yields by 24-35 percent. Other innovations in response to climate variability include improved weather and market information through global monitoring and forecasting. Increased use of mobile phones has also helped livestock farmers obtain and share market information and information on pasture availability. The Livestock Insurance Based on Satellite Data in Kenya is another example of the use of technology to cope with Climate change.
3.4. Production and Market Interventions

One of the options to improve and increase production is to capture market opportunities. When access to markets is increased producers develop better strategies to cope with production constraints, including those induced by climate change. One of the best examples is the Somalia case where long-term conflicts have contributed to climate change impact on production systems. With this background, the international community and the Somali Diaspora supported the issue of access to markets with a high level of success. This explains the increasing number of animals exported annually while there have been little interventions to improve production systems. Africa’s livestock producers are bucking a trend, by proving resilient to climate change and generating huge economic benefits for their nations and regions. Cross-border cooperation, such as that between Côte d’Ivoire and Mali, is an example of coping mechanism that enhances production and marketing of cattle between neighbouring countries. A booming trade in livestock has thrived for more than two decades between Somalia, Ethiopia and Kenya, despite rampant insecurity in the former and drought in the latter two, a testimony to resilience in extreme circumstances.

This demonstrates how pastoralism is a major animal production system contributing to many African economies and whose importance is set to grow in an environment of climate change. Pastoralists manage complex webs of profitable cross-border trade and draw considerable economic benefits from rangelands ill-suited to other land use systems. The financial inputs are minimal but the benefits extend beyond the herders and their communities to enrich the lives of millions of people involved in the livestock supply chain including consumers in other countries. Satellite remote sensing of vegetation has been used as a proxy for agricultural production in economic models to improve prediction of fluctuations in prices from year to year due to differences in supply. As demand increases, it is necessary to improve marketing systems to support viable production levels. Increasing Africa’s stability in the face of climate change requires investments in agricultural production and transportation infrastructure in order to ensure an affordable flow of food to communities. West Africa is home to populations that experience some of the highest levels of food insecurity in the world. Industrialized nations are increasingly shifting from policies of food donations to more global market-oriented solutions. This should induce some pro-active response on the African continent to ensure food self-sufficiency in the face of climate change.

3.5. Communication

The key communication challenges are that many Africans, particularly those in rural areas, do not have access to vital information in the face of increasingly unpredictable weather. These communities need timely weather information as well as resources. Although the communities are aware that weather patterns are changing, they do not get timely information to act on the effects of climate change. Most blame themselves for the impacts they are witnessing and some attribute them to the will of God. Local leaders are well placed to communicate on climate change issues and help their communities to respond, but they are also poorly informed about weather events.
4. STRATEGIC GAPS TO BE FILLED IN ADAPTING AND MITIGATING CLIMATE CHANGE FOR SUSTAINABLE CONTRIBUTION OF ANIMAL RESOURCES TO LIVELIHOODS

It is important to understand the priority areas where investments in terms of time, funds and human resources should be focused. There are generally few regional and national programmes focusing on mitigation and adaptation of climate change. There is need for an approach towards implementing programmes focusing on specific issues related to climate change. There is also need to expand the scope of such programmes to include the development of market based mechanisms to reward or provide incentives for carbon sequestration and reduced emissions, capacity building, use of appropriate financing mechanisms, science and technology transfer.

4.1. Governance and leadership

National services deliveries in the animal resources sector are hampered by poor policies which impede economic performance. The sector is vulnerable to climate sensitivity, with sometimes high economic impacts. This is exacerbated by existing developmental challenges such as poverty, complex governance and institutional dimensions; limited access to capital, markets, infrastructure and technology; ecosystem degradation; and disasters and conflicts. In many Member States, fiscal weakness has resulted in a reduction in support for agriculture, and indirectly to animal production, although the private sector provides some contributions. All these constraints have contributed to weak adaptive capacity, increasing Africa’s vulnerability to projected climate sensitivity.

4.2. Advocacy and awareness

While the effects of climate change are experienced most acutely at a local level the root causes of vulnerability to climate change are often far beyond the control of local community. Advocacy on climate change risk and vulnerability reduction is essential at all levels of government. Advocacy is necessary in the integration of climate risk into development planning and other mechanisms and structures that dictate paths of development and take climate change into account. Although Member States have begun to adjust to climate change through long and short-term coping strategies, there is a general lack of awareness of the challenges of climate change. Poor awareness, expressed in lack of guidance and political willingness, public support, aversion to change, lack of adequate human and institutional capacity to deal with uncertainty conflicts with competing development agendas and needs, are all prevailing issues currently. An understanding of climate change is important for encouraging and implementing appropriate adaptations. There is need to disseminate information
on the following:
• the nature of climate change and its potential to cause problems in all aspects of animal resources;
• the potential impacts both in the short and long-term;
• adaptation options applicable to the individual Member States

4.3. Coordination
Because of the multi-sectoral nature of impacts and adaptation to climate change, tackling the impacts from different angles in a synergistic and coordinated way is necessary. This arrangement allows better mainstreaming of climate change considerations in dealing with key animal resources issues. Isolated actions may not be adequate. Therefore, there is a need to create synergies and common and harmonized approaches. Coordination needs to be improved across all levels and actors in public and private sectors, to support sustainable adaptation processes in the social-ecological systems. It involves integrating adaptation at the policy formulation stage, at the planning stage, at the resource allocation stage and at the implementation stage. Climate change issues require an increased role for the Governments to ensure successful adaptation and mitigation. Increased public expenditure in animal resources is necessary under climate change scenarios.

4.4. Public and private partnerships
Currently, some effort and progress is being made to address the climate change challenge in Africa. Concerted action is required across the continent to reduce carbon emissions and adapt to the impacts of climate change. There is a need to stimulate behavior change across all stakeholders to reduce contribution to climate change and adapt to the efforts and progress. This process can be accelerated by promoting private and public sector partnerships. The public sector in partnership with the private sector should formulate and implement policies that will reduce the major risks and thereby decrease capital costs for climate-friendly investments. Substantial effort, creativity, and capacity will be required for carbon finance mechanisms, along with other policy and finance instruments, to address the urgency and scale of the climate change challenge on the continent.

As private sector requires detailed scientific information derived from climate models that could contribute to regional efforts, it is essential that time-scales be set to enable informed business decision making. This would help the private sector to respond timely to issues of climate change. There should be appreciation of the significant role the private sector can play in addressing climate change risks as well as investment and business opportunities available in mitigation and adaptation. Public and private organizations and institutions should share knowledge, experiences and expertise on issues related to climate change.

4.5. Market led approaches in mitigating climate change
Some of the main impediments to market-led approaches in mitigating climate change include over-regulation, taxation and the lack of realistic and cost-effective solutions when matching international standards with local capacity. Appropriate and supportive policies on climate change are required to encourage and promote private sector initiatives. Market development requires efficient exchange relationships and access to information, and some projects have sought to improve the availability of market information and data. Nevertheless, several generic issues can be associated with information: (a) processing information can be a costly activity; (b) information can be manipulated in a strategic manner, leading to opportunistic behavior; and (c) property rights to information may be incomplete, especially in terms of excludability. The role of capital markets in tackling climate change has largely been overlooked. The financial requirements necessary to help developing countries emit less carbon have not been made available at the rate and scale needed. Proposals to use market mechanisms to implement greenhouse gas emission reductions have revolved around three approaches: tradable permits (as “allowances” and as “credits”), carbon taxes, and joint implementation. The protocol negotiated at Kyoto contains articles on emissions trading and joint implementation. There are a number of barriers to investment in clean technologies and market penetration in Africa. The scales of these barriers vary between countries, the state of the financial sector, existing regulations and policies, and the availability of natural resources. Governments need to ensure conducive investment climates to spur private sector engagement. Institutional and policy changes, such as the removal or putting in place of subsidies, the development of income stabilization options, improvements in agricultural markets, and the promotion of inter-regional trade in agriculture, are some of the measures that could be taken. Identifying strategies to reduce atmospheric carbon dioxide emissions on the national level are therefore critical. There is now increasing interest in exploring strategies employed by pastoralists in mitigating the impact of climate change, with the carbon sequestration capability of Africa’s rangelands emerging as a real opportunity for arid and semi-arid lands. It is important to note that the rangelands capacity to store carbon is significantly reduced in heavily degraded areas, or where rangelands are converted to croplands. The carbon market is a means rather than an end, and its success will be measured by how it assists countries in meeting their climate change and sustainable development commitments and priorities. For some, efficiency and cost minimization will be critical while for others it will be equally important how the international carbon market helps to mobilize financing for environmentally-friendly technologies worldwide. This is especially important in major infrastructural investments that have long-term carbon emissions consequences.
4.6. Science and Technology

Africa lacks scientific data and information to adequately understand the impacts of climate change on the continent. Funding is too scarce to monitor all the pertinent variables, derive key information and communicate promptly and effectively with all stakeholders. Expertise in addressing climate change issues is limited, as many trained scientists work outside the continent. Areas for special attention include environment monitoring, climate risk management for livestock farmer support and several adaptation initiatives. Globally, Africa invests the lowest funding in research and development and imports and uses the least in terms of latest technology. Some of the main barriers to technology transfer include limited technology information, intellectual property rights protection, foreign direct investments, financial incentives and low industrial and technology base. Another fundamental issue is the institutional framework for technology transfer.

5. THE STRATEGY

A number of important issues and priorities in respect of global climate change and Africa have been discussed. In this section, attempts will be made to translate the challenges into tangible strategies and actions to be implemented by Member States. It is envisaged that these actions will help Africa achieve sustainable development, while also responding to climate change.

5.1. Guidelines

To address climate change and to make further contributions to developing animal resources on the continent, AU-IBAR will be guided by the following guidelines to:

1. Development of a long term pathway through a challenging policy landscape to address effects of climate change on animal resources
2. Addressing climate change more effectively through better coordination
3. Building evidence base, awareness and advocacy for better understanding of impacts and consequences of climate change on animal resources
4. Supporting strategic partnerships and networking of national platforms for animal resources and climate change
5. Ensuring that technology, innovation and skills from climate change related research are of maximum benefit to animal resources.
6. Development and implementation of policies and regulatory/market-based mechanisms

5.2. Principles

A number of principles and factors guided the conception of this strategy. These are:

1. Ensuring that the strategy is consistent with Member States priorities, including poverty alleviation, access to basic amenities including infrastructure development, job creation, rural development, foreign investment, capacity development and improved health, leading to sustainable economic growth;
2. Ensuring alignment with the need to consistently use locally available resources;
3. Ensuring alignment with the CAADP/NEPAD frameworks;
4. Recognizing that climate change is a cross cutting issue that demands integration across programmes, stakeholders, sectors of industry, business and the community;
5. Focusing on animal production and related areas that promote sustainable development;
6. Promoting programmes that will build capacity, raise awareness and improve communication, education in animal resources and climate change issues;
7. Encouraging programmes that will harness existing national technological competencies;
8. Reviewing the strategy constantly in the light of Member States priorities and international trends;
9. Recognizing that Africa’s carbon emissions are low and will increase with development.

In devising this strategy, an integrated approach was followed. The framework of interventions thus takes into account the policies and programmes of Member States related to climate change. This should ensure that the principles of sustainable development are adequately served and do not conflict with existing development policies.

5.3. Objectives

The strategic goal is to respond to climate change and to make significant achievements in controlling its effect on animal resources, to enhance the capability of continuous adaptation to climate change, to promote climate change related science, technology and R&D to new levels, to markedly raise public awareness on climate change, and to further strengthen institutions and mechanisms on climate change.

6. KEY ACTIONS OF THE AU-IBAR CLIMATE CHANGE ADAPTATION AND MITIGATION STRATEGY

An approach that focuses on 6 key themes has been developed, which covers the significant aspects that can have an impact on climate change. Each of these is explained in terms of the impact and the approach. The delivery of the over-arching strategy is supported by a detailed Climate Change Action Plan, which sets out the key actions that will be taken by AU-IBAR. This covers direct action and mechanisms that will be conducted for ongoing monitoring and review, to ensure that it continues to deliver the desired improvements, and the steps the AU-IBAR will take to influence MS and other stakeholders.

6.1. Development of a long term pathway through a challenging policy landscape to address effects of climate change in animal resources

Adaptation to climate change in the African socio-political subsystem is lagging behind, and this is hindering the switch from spontaneous to planned adaptation through reflective and strategic decision-making processes. Complex governance and institutional dimensions are, in some cases, insufficient to deal with environmental degradation and disaster risks and those exposed during periods of climate stress. The key objective of such strategy is to improve governance of animal resources and increase resilience of the animal populations and farming communities to the adverse effects of climate change, particularly to extreme climate shocks. It is imperative to influence policies on climate change related to animal resources in order to promote innovation processes which improve responses to climate variability and change, particularly in rural environments. It focuses on integrating adaptation within development activities at the national, sectoral and project levels. It is necessary to establish improved governance systems based on quality of growth in terms of the poor farmers and the environment, and the reform of national policies on trade. Institutional and governance reforms that provide a balance between demand and supply across sectors and mainstream adaptation to climate change are necessary. Local adaptation needs flexible governance at all levels to support a planned approach and meet the requirements for sustainable natural resource management. Addressing adaptation to climate change at the national level will include: identifying and engaging key national actors; improving access to local as well as regional climate information; organizing government structures to better address adaptation; build upon and reinforce existing national mechanisms for disaster risk reduction; modify regulations and standards to reflect current and anticipated climate risks; and enhance linkages between regional commitments and adaptation.
Key actions of AU-IBAR

- Influencing policies on climate change related to animal resources in order to promote innovation processes to improve responses to climate variability and change in rural environments
- Assisting in the reform of national policies on trade, institutional and governance issues that balance demand and supply and mainstream climate change adaptation in animal resources

6.2. Address climate change more effectively through better coordination of actions

The question of coordination of actions and exchanges of experiences has already been raised within the RECs and the Member States. Through the coordination of actions related to climate change impacts and response strategies, AU-IBAR is working with partners to create an enabling platform for Member States. It aims to help facilitate dialogue and coordinate joint action by stakeholders from an African perspective and raise awareness on the need for Member States to contribute to the climate change debate at the international level, through stakeholder consultations at various meetings on the continental calendar. This coordination of actions will target the establishment of regional programmes to reduce the vulnerability of individual Member States to the impacts of climate change. Through this coordination and exchange mechanism, it is possible to share experiences (lessons, successes, failures), to better capitalize on knowledge about adaptation and to have a broader vision of climate change.

Key actions of AU-IBAR

- In partnership with relevant institutions develop early warning systems and facilitate implementation of mechanisms supporting disease control, stocking/destocking/animal movement decisions, rangeland and crop management practices in agro-pastoralist systems
- Develop and conduct stakeholder awareness raising campaigns (ALive platform, taking advantage of traditional knowledge) for communication and knowledge exchanges

6.3. Building evidence base, awareness and advocacy so that impacts and consequences of climate change on animal resources are understood

The Thematic Programme Network No III (TPN3) is a participatory and voluntary network involving a wide range of members, including countries, national institutions and local community groups. Since its adoption in 1996, African states committed themselves to come up with proposals for urgent mitigation actions to alleviate the negative impacts of drought and desertification. Some priority activities of the TPN 3 are as follows: to promote capacity-building in rational use of rangelands and fodder crops and development activities that are implemented at the regional level; to strengthen exchange of information and appropriate technologies, and share relevant experiences; to co-ordinate and compile the various activities related to combating desertification.

The leadership of the ALive platform could take a leading role in addressing constraints related to awareness on climate change and promoting the development of a common vision on appropriate policies for pro-poor and sustainable animal development in Africa and its sub-regions.

Key actions of AU-IBAR

- Take steps to encourage integration of fisheries and wildlife into the national and international climate change agendas so as to secure space for fisheries and wildlife in financial instruments that support both adaptation and mitigation.
- Inform ongoing international negotiations which are critical for the future of Africa animal resources sector
- Support Universities and research institutions in documenting climate change evidence in production systems
- Help deliver strong, coherent and effective messages to decision-makers on topics related to climate change

6.4 Supporting strategic partnerships and networking of national platforms for animal resources and climate change

The climate change partnerships will support this action by providing effective guidance in its networks and promoting the principle of leadership on climate change issues to its stakeholders and implementing their National Action Plans. The partnerships will bring together key stakeholders (public, private and civic and voluntary sectors) in the regions to drive the efforts to address the causes and effects of climate change. These partnerships will promote issues of climate change including integrating key adaptation work arising from Regional Adaptation Studies. The aims of the partnerships will be to help the continent to sustainably develop in continually changing climatic conditions and to provide leadership for joint activities on mitigating and adapting to climate change.
The common element in partnerships is recognition that both public and private sectors possess different attributes and capacities in relation to access to resources, innovativeness and knowledge systems. Public-private partnerships may prove effective in technology transfer, particularly as national and international organizations adopt the long-term goals of sustainable development. Public-private partnerships and partnerships with Non-Governmental Organizations (NGOs) can help to provide long-term solutions to Emerging Infectious Diseases. Public-private partnerships can also contribute to the development of coherent policy frameworks and attract increased private capital into the animal sectors.

**Key actions of the AU-IBAR**

- Provide direction and leadership to ensure and inspire Member States and RECs to commitment to the climate change agenda on animal resources.
- Sensitize stakeholders to the risks and opportunities associated with climate change by creating a platform through which learning and communication among stakeholders can take place.

**6.5. Ensuring that technology, innovation and skills climate change related research are of maximum benefit to animal resources**

The integration of new technologies from research and technology transfer systems potentially offers opportunities to further the development of adaptation strategies to climate change. Geospatial information and spatial analysis tools, and other decision support tools will continuously play a crucial role in improving understanding on how climate change will affect livelihoods of sedentary farming and pastoral communities and animal resources. Satellite technology can be used for daily monitoring of river levels and soil moisture, for efficient water resources management, especially in trans-boundary waterways. Capacities should be built to empower researchers, industry, communities and individuals to tap into new and emerging opportunities in the “green” economy and meet the challenges of adaptation to climate change.

**Key actions of the AU-IBAR**

- Encourage participation from the private sector in the development of technological innovations that will support a low-carbon growth path for Africa.
- Focus on projects that will assist with mitigation and adaptation to climate change and address specific areas of animal resources.

**6.6. Development and implementation of policies and regulatory/ market-based mechanisms**

Market-based approaches can enable governments to put in place systems that encourage innovation in industry while at the same time providing environmental protection, credibility and cost-efficiency in addressing climate change challenges and meeting carbon emission reduction targets. Under a global climate regime, market-based approaches have the potential to significantly reduce the costs and increase the feasibility of achieving long-term reductions required to address the risks of climate change. These approaches can also provide incentives for the development and deployment of low-carbon energy technologies and promote technology transfer to less developed countries.

**Key actions of the AU-IBAR**

- Encourage enhanced and active participation of African countries in standards-setting platforms.
- Design policies and instrument frameworks that effectively leverage capital and know-how to deliver effectively address climate change related to animal resources.
7. FINANCIAL MECHANISMS AND RESOURCE IDENTIFICATION FOR THE IMPLEMENTATION OF THE STRATEGY

Climate change financing is one of the most important issues in international negotiations. Mobilizing sufficient funds to address climate change mitigation and adaptation is therefore a key concern. Any option for a financial mechanism should include the following key functions:

- Specific finance raising mechanisms
- Governance
- How finances are distributed and used
- Transparent and trustworthy legal systems
- Appropriate tax regimes
- Trade policies
- Regulations on benefits and risks sharing the repatriation of investment earnings

Multilateral and bilateral development finance institutions could establish mechanisms whereby private sector institutions from both developed and developing countries could access packages of support to allow the establishment of large-scale infrastructure or private Adaptation funds investing in climate change mitigation.

An Adaptation fund that will be directly operational and provide priority funding for infrastructure in animal resources in Member States, with particular focus on regional infrastructure needs. The fund could be managed by AU-IBAR. In raising funds there is need to take advantage of innovative strategies such as carbon markets and funding which could contribute to existing financial assistance from Bilateral and Multilateral Donor Programmes (USAID, DFID, GTZ and GEF).

A range of proposals for generating additional public and private funding are currently under discussion. Climate change financing, needs to be integrated into Member States planning and budgeting mechanisms. This will enable partner countries to have genuine ownership and control over financial resources. Recording these resources in national budgets will contribute to good governance and accountability. In order to ensure that the international community is responding to genuine local needs and priorities articulated by the recipient countries, it is important that new and additional climate change financing is channelled through countries’ existing financial allocation systems. The exact details of the operational modalities could be discussed and developed by AU-IBAR, the Member States, RECs, the private sector and
development partners. However, the fundamental principle of the operation of the fund shall be that it will be used solely to finance activities under the scope of the strategy. The fund will, therefore, be limited to a number of thematically focused financing mechanisms that reduce high transaction costs generally experienced when dealing with large numbers of development partners.

Carbon markets and the Clean Development Mechanism will not deliver the financial flows necessary to meet all climate change mitigation and adaptation needs. It is therefore important to explore other sources of finance. There are various ways in which private finance can support mitigation and adaptation. Debt, in particular, can be used as an enabling instrument for both publicly and privately-initiated investments, including direct project lending and lines of credit to local finance institutions. However, to reach the poor in a more meaningful manner, financing will need to be delivered in new ways, including through microfinance and other innovative products. Private finance is vital in addressing climate change. Strong, stable, transparent, coherent and credible long-term national policies are key for encouraging private sector investments in renewable energy and low carbon technologies.

As a central priority, the agreement reached in Copenhagen must provide for sufficient funding for adaptation in least developed countries. To ensure that adequate resources are available to carry out the tasks required for mitigation and adaptation to climate change, Africa could make use of the financial opportunities made available through UNFCCC provisions.

8. **THE WAY FORWARD**

Most Member States are still in early stages of identifying appropriate responses to climate change risks and have limited practical experience of mainstreaming climate change adaptation into national development planning. However, the experiences outlined above give some indication of the number of barriers (governance and leadership, advocacy and awareness, coordination, public and private partnerships, market-led approaches in mitigating climate change, information, science and technology) and opportunities for mainstreaming climate change adaptation. It must be clearly understood that AU-IBAR and governments of Member States alone cannot carry out the tasks identified in this document. Success can only be achieved through the involvement of the private and non-governmental sectors. The implementation of the strategy will require substantial financial and other resources. As climate change is a cross cutting issue, various sources of funds could be tapped into. These initiatives need to be nurtured and encouraged to full implementation. Complementary assistance is needed not just to strengthen the implementation, but also to ensure that local government planners, resource managers and other stakeholders are equipped and helped to use this new strategy to address climate change issues and adaptation measures in animal resources.
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