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**BEYOND FENCES:
POLICY OPTIONS FOR BIODIVERSITY,
LIVELIHOODS AND TRANSBOUNDARY
ANIMAL DISEASE MANAGEMENT IN
SOUTHERN AFRICA**

Final Close-Out Report
December 2014

Scaling up Conservation Success with SCAPES
A program of the Wildlife Conservation Society
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EXECUTIVE SUMMARY

Across southern Africa, transboundary animal disease issues negatively impact both biodiversity and livelihoods. The vision of open wildlife migration and dispersal routes in the five-nation Kavango Zambezi (KAZA) Transfrontier Conservation Area (TFCA) is at odds with thousands of kilometers of veterinary fencing put in place over many decades to separate wildlife and livestock (see map). In fact, veterinary cordon fencing, maintained by governments to prevent the transfer of the foot and mouth disease virus between wildlife and livestock (necessary for commercial beef export access to lucrative international markets), is a major feature in many parts of the region. Over decades, these fences have contributed to the collapse of populations of wild ungulates by disrupting key migration paths and blocking access to seasonally important water and grazing. Furthermore, rural communities living in areas with wildlife are unable to sell their healthy cattle to export markets because of international animal disease control regulations that currently require veterinary fencing, leaving these communities with few options.

Using health as an entry point, the WCS AHEAD (Animal & Human Health for the Environment And Development) Program has been working with regional partners to develop scientifically sound, non-fence based approaches to managing risks from diseases like foot and mouth in ways that help Africa's pastoralists and farmers, do not threaten free-ranging wildlife, and also provide confidence to beef importing countries that the products they are buying pose minimal threats to their own agricultural sector.

Strategies to achieve this resilient basket of development objectives focused on:

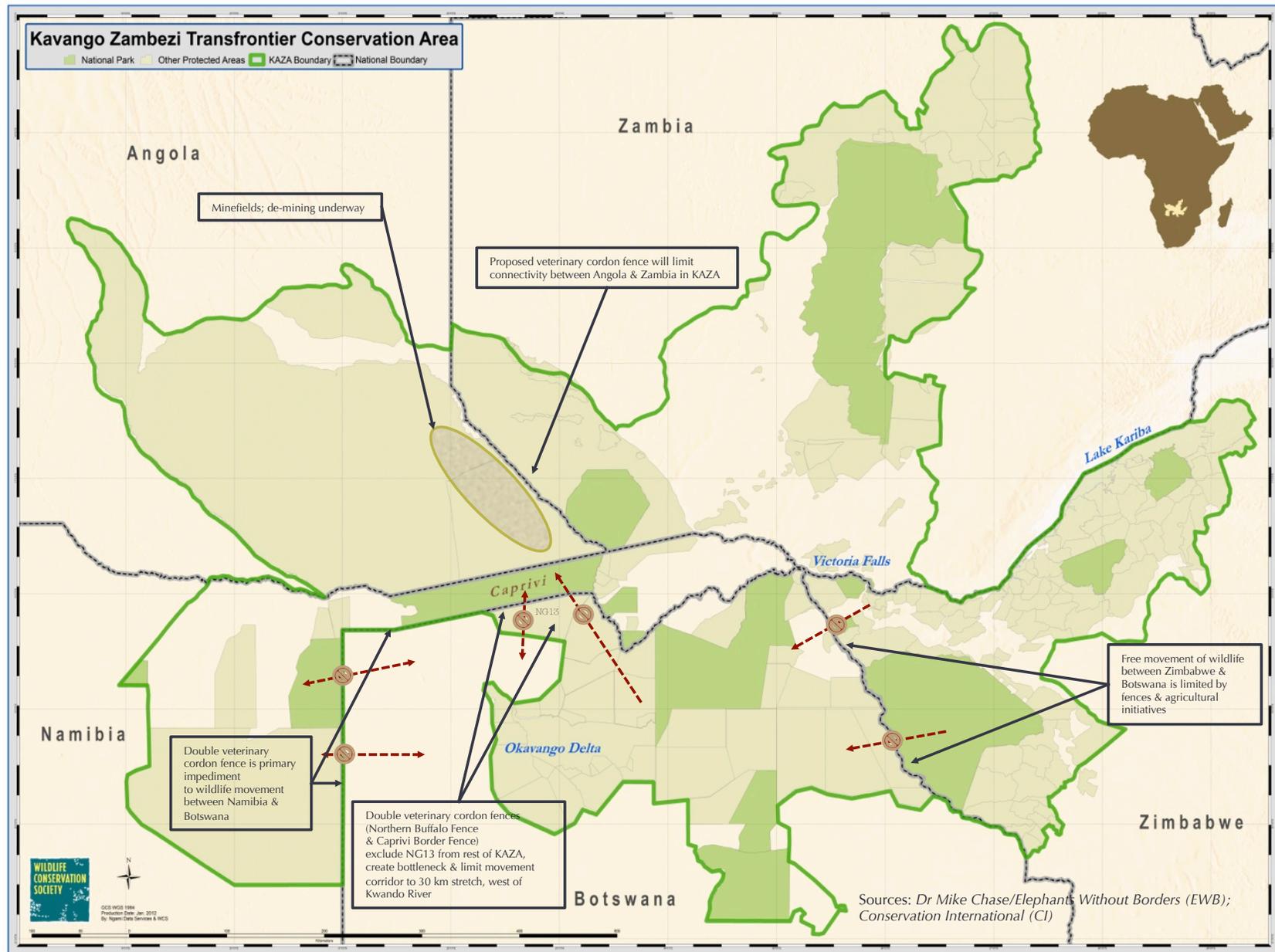
1. Facilitating an enabling environment for enhanced cooperation among often competing sectors (conservation and agriculture);
2. Identifying and promoting mechanisms for controlling transboundary animal diseases without complete reliance on current fencing approaches; and
3. Informing and influencing cross-sectoral and transboundary policy responses that support both TFCAs and the control of transboundary animal diseases.

Over the past five years, AHEAD's 'Beyond Fences' project in KAZA has fundamentally changed the way policy makers in southern Africa, and internationally, view the issue of transboundary animal disease management as it relates to livestock production and trade in the broader context of optimizing land-use and facilitating effective wildlife conservation. Our policy and outreach work has enhanced the understanding of the negative impacts of an entrenched but outdated disease control paradigm based on strict physical separation of wildlife and livestock via extensive systems of veterinary cordon fencing while providing a rational, internationally acceptable alternative that takes into account the needs of both wildlife and local people. This fresh perspective has the potential to transform the lives of rural farming communities who share the land base with wildlife, and who have traditionally been excluded from beef export markets as a result. Moreover, the scientifically sound non-fence based approaches to managing disease risk that AHEAD and partners have developed have the potential to facilitate realignment and, in some cases, removal of fences in southern Africa, opening up the potential for the return of large-scale movements of wildlife across the region, including seasonal movements of (and range expansion by) the world's largest population of elephants (approximately 250,000). This work is fundamental to any chances of SADC's vision for transfrontier conservation being realized.

As a result, real policy change as related to foot and mouth disease management, international trade in beef products, and more judicious use of veterinary fencing (with fewer environmental impacts and with enhanced options for wildlife corridors) now seems truly possible. This "Nature, Wealth, Health and Power"-aligned work is of recognized importance to food security, economic growth, sustainable natural resources management, and climate change adaptation in southern Africa, East Africa, and even Central Asia where countries like Mongolia continue to battle similar challenges posed by foot and mouth disease at the interface between livestock and wildlife.

ABBREVIATIONS

AHEAD	Animal & Human Health for the Environment And Development
BIDPA	Botswana Institute for Development Policy Analysis
CBT	Commodity-Based Trade
DWNP	Department of Wildlife and National Parks (Botswana)
EU	European Union
FANR	Food, Agriculture and Natural Resources (SADC)
FAO	Food and Agricultural Organization (United Nations)
FMD	Foot and Mouth Disease
GLTFCA	Great Limpopo Transfrontier Conservation Area
GLTP	Great Limpopo Transfrontier Park
KAZA TFCA	Kavango Zambezi Transfrontier Conservation Area
LTC	Livestock Technical Committee (SADC)
MCA	Millennium Challenge Account (USG)
MCDA	Multi-Criteria Decision Analysis
NGO	Nongovernmental Organization
OIE	Office International des Epizooties (World Organization for Animal Health)
SADC	Southern African Development Community
SCAPES	Sustainable Conservation Approaches for Priority Ecosystems
SPS	Sanitary and Phytosanitary
TADs	Transboundary Animal Diseases
TAHC	Terrestrial Animal Health Code (OIE)
TFCA	Transfrontier Conservation Area
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USG	United States Government
WCS	Wildlife Conservation Society
WHO	World Health Organization (United Nations)
WWF	World Wildlife Fund



Map of the KAZA TFCA showing key wildlife migratory pathways that are currently constrained (red arrows) by the presence of veterinary cordon fences

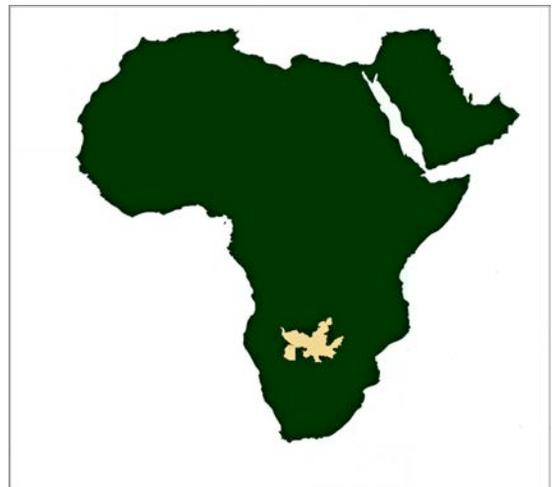
SUMMARY OF POLICY SCOPE

The Wildlife Conservation Society's (WCS) 'Beyond Fences' project is working to address problems facing biodiversity conservation and development in large, transboundary landscapes by focusing on the critically important linkages among wildlife health, domestic animal health, and human health and livelihoods.

In large parts of southern African, wildlife conservation and livestock production are in conflict, particularly in and around the 14 terrestrial transfrontier conservation areas (TFCAs) under development. These TFCAs, mainly located in semi-arid areas where crop production is problematic, are intended as multiple land-use areas that will enable a variety of economic activities to take place – but with an emphasis on conserving biodiversity. Nature-based tourism is anticipated to continue to contribute to economic growth opportunities and poverty alleviation, but other forms of income generation will also continue to be essential, including traditional livestock farming which is culturally important to millions of people who have lived in these areas for generations.

It's critical to note that current internationally accepted approaches to managing livestock diseases of economic importance (e.g. foot and mouth disease - FMD), which rely on veterinary cordon fencing to separate wildlife from livestock, are not compatible with the TFCA concept which promotes landscape connectivity and free movement of wildlife. Veterinary cordon fencing, established and maintained by governments to separate animals of differing disease status (necessary to meet international standards for commercial sector beef export to lucrative markets), has been ecologically disastrous for wildlife populations – disrupting key migration paths and blocking access to seasonally important water and grazing. Furthermore, rural communities living in areas with wildlife are unable to sell their healthy cattle to export markets because of international animal disease control regulations that currently require veterinary fencing, leaving these communities with few options. The result is that the incompatibility between (a) current regulatory approaches for the control of diseases of agro-economic importance and (b) the vision of vast conservation landscapes without major fences represents one of the key threats to transboundary conservation success, and thus risk diversification of land-use options and livelihood opportunities – particularly important given the realities of regional climate change and ongoing food insecurity.

Since 2003, WCS and partners have been focusing on this suite of issues through the Animal & Human Health for the Environment And Development (AHEAD) program, which has worked to facilitate transparent, multidisciplinary policy dialogue and planning at various scales in the region. In 2010, with support from the USAID / EGAT SCAPES program, United States Fish and Wildlife Service (USFWS) and the Rockefeller Foundation, WCS scaled-up this approach to the largest of the TFCAs – the Kavango Zambezi (KAZA) – through the 'Beyond Fences' project. Covering more than 450,000 km² and straddling five countries (Angola, Botswana, Namibia, Zambia and Zimbabwe), KAZA is home to more than 1.5 million people and their livestock and a wide array of wildlife, including the largest contiguous population of elephants (approximately 250,000) on the continent.



Spanning multiple countries, the KAZA TFCA is larger than the states of New York, New Jersey, Virginia, Maryland, Delaware and Pennsylvania combined.

Specifically, 'Beyond Fences' is working to bring key policy makers and relevant sectoral expertise together to explore new alternative non-fence-based approaches to managing diseases like FMD, and to evaluate policy interventions that support both transfrontier conservation and rural development objectives. We are focusing on government officials in the livestock sector, and multilateral bodies such as the Southern African Development Community (SADC), World Organization for Animal Health (OIE), and the Food and Agricultural Organization of the UN (FAO), to help facilitate collaborative, integrated approaches to rural development in KAZA, including disease management alternatives such as commodity-based trade. Commodity-based, non-geographic approaches to disease control have the potential to facilitate access to new beef markets for southern African farmers and pastoralists as well as to enhance the long-term viability of TFCAs, as FMD management under these conditions would no longer require all of the extensive migration-disrupting veterinary fencing that currently crisscrosses this vast region.



Makgadikgadi Pans, Botswana. The present approach to the control of important transboundary animal diseases (such as foot and mouth disease) relies on the use of extensive fences to prevent movement of susceptible animals between areas where the disease occurs and areas where it does not. This approach is incompatible with the vision of vast conservation landscapes, the long-term success of which depends largely upon the unrestricted movement of wildlife. Photo: Mark Atkinson/WCS AHEAD

SUMMARY OF OUTPUTS

This policy SCAPE has had the goal of establishing approaches for reconciling the management of transboundary animal diseases (TADs) with the need for TFCA connectivity, and developing recommendations for policy modifications in collaboration with TFCA partners. The steps required to achieve this, and annual progress made, are summarized in the Policy Success Index below.

'Beyond Fences' Policy Success Index

Steps completed (Fiscal Year = target for completion)						
Policy Initiatives	Assemble relevant national policy documents: Angola, Botswana, Namibia, Zambia, Zimbabwe	Analyze current policies related to Transboundary Animal Diseases (TADs) management in context of TFCA (identifying constraints to conservation success)	In collaboration with national, regional & international partners, incl. KAZA member countries, identify potential new approaches to TADs management in context of TFCAs	Make appropriate policy modification recommendations to KAZA member countries	Communication & educational activities undertaken to promote policy modification recommendations	Consideration &/or adoption of management & policy recommendations by KAZA member countries, relevant multilateral bodies (e.g. SADC, OIE)
New approaches for reconciling management of transboundary animal diseases with needs for TFCA connectivity identified, and recommendations for policy modifications developed in collaboration with TFCA partner countries	2011 – legal & policy frameworks & regulations report completed; shared with decision makers / stakeholders	2012 – constraints to conservation & development success report completed; shared with decision makers / stakeholders	2012 – TADs status & control measures report completed; 2013 – socioeconomic analysis completed; 2013 – manuscripts outlining new approaches to TADs mgnt developed & submitted to peer review journal; 2014 – practical guidelines on operationalizing new approaches to TADs mgnt developed	2012 – consistent with 'Beyond Fences' recommendations, SADC endorses CBT and adopts OIE Terrestrial Animal Health Code (TAHC) Article 8.5.25 as regional standard; 2013 – SADC/AHEAD workshop delegates draft Phakalane Declaration & recommend sending to SADC Livestock Technical Committee (LTC) for endorsement, which occurs; 2014 – regional partner & member country government level meetings undertaken	2011 – KAZA TFCA Animal Health sub-Working Group meeting held; 2013 – SADC/AHEAD workshop held; 2013 – peer reviewed papers accepted for publication; 2013 – training & technical input provided to inform policy analysis report for Botswana Parliamentary Select Committee on Beef; 2014 – peer reviewed papers published; 2014 – AHEAD exclusive interview with OIE Director General provides assurances to SADC member states that Phakalane Declaration in line with OIE thinking; 2014 – sharing of policy analyses with key decision makers & stakeholders; 2014 – through AHEAD technical input, report to Botswana Parliamentary Select Committee on Beef highlights need to adopt Phakalane Declaration approach (commodity-based, not dependent on fencing)	2011 – KAZA TFCA Treaty recognizes animal health concerns; 2012 - SADC endorses non-geographic disease control methods such as CBT & adopts OIE TAHC Article 8.5.25 as regional standard; 2013 - SADC LTC endorses Phakalane Declaration; 2013 & 2014 – Botswana Parliamentary Committee requests briefing by AHEAD on alternative disease management strategies; 2014 – SADC LTC requests AHEAD leadership / technical input on proposed revisions to OIE TAHC, comments subsequently submitted to OIE; 2014 – OIE assures SADC that comments will be addressed in TAHC revision; 2014 – SADC LTC member states commit to investigate implementation of national CBT approaches to beef trade; 2014 – OIE Director General endorses 'One Health' approach & utilizes AHEAD Update interview to emphasize need for intersectoral collaboration to ensure long-term sustainability for both wildlife & livestock sectors; 2014 – tacit approval of MCA-CBT pilot in heart of KAZA by Directorate Vet Services Namibia; OIE to release updated TAHC FMD mgnt guidelines in May 2015

MAJOR PROJECT IMPACT

The SCAPES 'Beyond Fences' initiative has fundamentally changed the way policy makers in southern Africa, and internationally, view the issue of transboundary animal disease management as it relates to livestock production and trade in the broader context of effective wildlife conservation. Enhancing the understanding of the negative impacts of an entrenched but regionally inappropriate disease control paradigm based on zonation and extensive systems of veterinary cordon fencing while providing a rational, internationally acceptable alternative that takes into account the needs of both wildlife and local people, has allowed a fresh perspective that has the potential to transform the lives of rural livestock farming communities who share the land base with wildlife and who have traditionally been excluded from export markets as a result. Moreover, the scientifically sound non-fence based approaches to managing disease risk that AHEAD and partners have identified have the potential to bring down / allow for realignment of fences in southern Africa, opening up the potential for enhanced large-scale movements of wildlife across the region, including seasonal movements of (and range expansion by) the world's largest population of elephants (approximately 250,000).

As described above, the project has had the goal of establishing approaches for reconciling the management of transboundary animal diseases (TADs) with the need for TFCA connectivity, and developing recommendations for policy modifications in collaboration with TFCA partners. In essence, the work has focused on altering land-use policies that have been regionally entrenched for more than half a century, with roots in the region's colonial era. The key policy milestones achieved (see Box 1), together with the progress described below, reflect progressive thinking on the part of policy makers both at regional and international levels. These are important steps along an incremental process of gaining international approval for rational non-geographic approaches to animal disease risk management – ones that don't rely completely on fences.

Importantly, 'Beyond Fences' helped create an environment conducive to the critical examination of animal health policy in the region. In August 2011, the Presidents of the five KAZA partner countries signed a binding Implementation Treaty thereby establishing the TFCA as a legal entity and solidifying their commitment to KAZA. Thanks in part to the efforts of 'Beyond Fences' during the first phase of SCAPES, the Core Objectives of the final KAZA Treaty (2011) directly address animal health concerns. Specifically, Article 6 includes the following objective: "promote and facilitate the harmonization of relevant legislation, policies and approaches in the area of transboundary animal disease prevention, surveillance and control within the KAZA TFCA." The inclusion of this objective in the Treaty underlined the importance of 'Beyond Fences' outreach and science-based influence in the region at the highest levels.

In addition, the cross-sectoral dialogue AHEAD helped catalyze has led to a regional network of informed stakeholders willing to come together to endorse new policy approaches. Regional institutions such as the SADC Livestock Technical Committee (LTC), and its member states, have become increasingly interested in evaluating the applicability of non-geographic approaches to improve compatibility and coherence between international food safety standards and animal disease management standards – and conservation. Consistent with 'Beyond Fences' recommendations, in 2012 SADC endorsed non-geographic disease control methods like commodity-based trade and adopted OIE Terrestrial Animal Health Code (TAHC) Article 8.5.25 as a regional standard, recognizing 8.5.25 still needed some additional modification for the southern African context. The OIE's TAHC is the internationally agreed policy document guiding animal disease management for all countries engaged in the livestock trade and therefore directly influences land-use management decisions of relevance to southern Africa's conservation sector. Following this, delegates at the Joint SADC/AHEAD workshop on *'Reconciling Livestock Health and Wildlife Conservation Goals in Southern Africa'*

Strategies for Sustainable Economic Development' (see http://www.wcs-ahead.org/phakalane_workshop_2012/phakalane_workshop_2012.html) came together and worked within the SADC framework to draft and endorse the '*The Phakalane Declaration on Adoption of Non-Geographic Approaches for Management of Foot and Mouth Disease*' (see http://www.wcs-ahead.org/phakalane_declaration.html).

Box 1: Key Policy Milestones

(2011) SADC invites AHEAD to address the Livestock Technical Committee (LTC) and participate in future LTC meetings

(2012) SADC LTC adopts recently updated OIE Terrestrial Animal Health Code Article (8.5.25) allowing for commodity-based trade as a regional standard

(2012) SADC Secretariat formally requests OIE & FAO to provide guidance on application of non-geographic approaches to animal disease management

(2012) FAO & OIE develop Global Strategy for the Control of Foot and Mouth Disease recognizing unique ecological, wildlife conservation and human development challenges faced by policy makers in the southern Africa region and acknowledge non-geographic approaches such as compartmentalization and commodity-based trade as important potential strategies to manage transboundary animal diseases in southern Africa

(2012) The Great Limpopo Transfrontier Park's (GLTP) tri-national Joint Management Board issues the first public position statement by a SADC transfrontier park or conservation area formally recognizing the need for adoption of trade standards for commodities and products that are compatible with biodiversity conservation

(2012) Following joint workshop co-convened by AHEAD, SADC LTC endorses '*The Phakalane Declaration on Adoption of Non-Geographic Approaches for Management of Foot and Mouth Disease*'

(2013) SADC Secretariat identifies critical deficiencies in OIE's draft FMD chapter update in the Terrestrial Animal Health Code; requests AHEAD's leadership in conducting comprehensive review; based on review, recommends substantive changes to OIE

(2013) OIE Working Group on Wildlife Diseases invites AHEAD to provide input on TADs management and control in the context of southern African TFCAs; OIE considers AHEAD's recently published papers as they work to update relevant policy guidelines for international trade in livestock

(2014) Botswana Parliamentary Select Committee investigating the decline of the beef industry and collapse of the Botswana Meat Commission requests two special presentations by AHEAD on alternative, locally relevant FMD management strategies in the context of the need to rejuvenate regional and international trade in livestock and livestock products

(2014) Namibia veterinary authorities publically support commodity-based trade market access study in Zambezi (formerly Caprivi) Region (KAZA)

(2014) SADC LTC member states commit to investigating potential for implementation of national commodity-based, value chain approaches to facilitate and improve intra-regional trade

(2014) OIE endorses the '*One Health*' approach as an effective way of addressing animal and public health issues globally; acknowledges that the objectives of the Phakalane Declaration align with those of the OIE; accepts that the impact of FMD *control measures* on wildlife is an important consideration, and states that before implementing an FMD control program, cross-sectoral discussions within each country should assess mid- and long-term consequences on both livestock and wildlife populations, so as to ensure sustainability.

The principles of the Phakalane Declaration have also been embraced in northeastern Namibia, which lies in the heart of the KAZA TFCA. The recently completed Millennium Challenge Account (MCA)-funded 'Development of Export Opportunities for Beef Products from the Zambezi Region' study, in which AHEAD provided technical assistance and wildlife expertise, has demonstrated that a commodity-based, value-chain approach to beef production is effective in ensuring foot safety and FMD risk management in areas where FMD is endemic in wildlife. While formal, final approval of policy recommendations arising from the project are still pending, informal approval from the Namibian Directorate of Veterinary Services has been received.

We are continuing on a path towards key changes in international policy governing animal disease control and beef trade. The OIE's TAHC chapter on FMD is currently being rewritten, with a final version to be presented for adoption at the 83rd OIE World Assembly in May 2015. AHEAD played a pivotal role in conducting a comprehensive review of the chapter for SADC, and AHEAD's technical comments were subsequently incorporated into SADC's submission to the OIE for consideration. The Director General of the OIE has assured SADC that these comments will be addressed in the May 2015 update of the TAHC.

Overall, it has become clear that AHEAD's efforts over the past five years have led to a much greater understanding by regional and international policy makers of the critical issues that pervade the nexus of wildlife health, livestock health and human health and livelihoods in southern African TFCAs like KAZA. Through 'Beyond Fences' and our close engagement with SADC, we have been able to gain the attention of regional and international policy makers and promote recognition of the local and regional contexts needed to inform broader regional and global disease control strategies. Furthermore, the cross-sectoral dialogue and enabling environment we have catalyzed now appears to be embedded in regional institutions such as the SADC LTC. We also believe we are at a tipping point regarding key changes in regional and international policy governing animal disease control and beef trade. This is evident in discussions with the OIE Director General, whereby the OIE now acknowledges:

"Before implementing an FMD control programme, the intersectoral discussions within each country should assess mid- and long-term consequences on both livestock and wildlife populations, so as to ensure its sustainability."

Moreover, success in fostering OIE policy change has worldwide implications – ones that have the potential to avoid the same fence-based mistakes from being made in other grassland systems in East Africa and Central Asia. In fact, the model developed in KAZA could be scaled-up to transform the way livestock, wildlife and fences are managed and the way we approach conservation work globally.

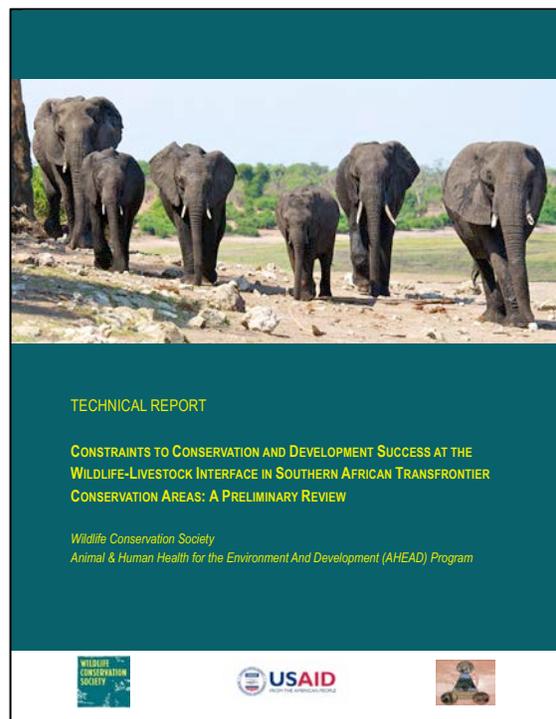
These developments represent a key step towards new land-use planning approaches compatible with SADC's own vision for perhaps 120 million hectares of reconnected TFCAs – the boldest terrestrial pro-conservation agenda on the planet today. Furthermore, in semi-arid regions of Africa where climate change scenarios predict increasing aridity, implementation of commodity-based (non-fence based) approaches to managing disease risks across the beef value chain would not only improve market access for rural livestock farmers, but augment options for adaptation for both pastoralists and wildlife needing to move to access grazing and water resources. The 'Beyond Fences' approach is thus very much a component of climate smart agriculture in the region.

PRINCIPAL STRATEGIES AND CORRESPONDING RESULTS

Strategy 1: Create an enabling environment for cooperation and collaboration between often competing sectors (livestock and wildlife)

At the start of the ‘Beyond Fences’ project, AHEAD and our partners / technical experts in the region were the only entities that had clearly identified the need for improved TADs management in southern Africa from the perspective of biodiversity conservation. While several theoretical alternatives for TADs management existed – with commodity-based trade rising to the top of the list – regional decision-makers had not begun to consider the need for such an approach, and for the most part, no realistic alternatives to veterinary cordon fencing for the control of TADs existed. Furthermore, tensions between the livestock and wildlife sectors run deep in southern Africa, and wildlife conservation and livestock production are commonly viewed as being incompatible. A key project strategy, therefore, was to facilitate an enabling environment conducive to the critical examination of prevailing animal health policy in the region. Creating such an environment depended upon engagement with individual stakeholders, experts, sectors and nations, as well as regional and international multilateral bodies such as SADC, OIE and FAO.

White paper reviews. To provide decision-makers with relevant background information needed for objective evaluation of policy options, in 2010 and 2011 we undertook an intensive review and analysis of existing legislation and policy as related to natural resource management and livestock production in the region. The resulting report, entitled ‘*Animal Health Policy, Legislation and Trade in Beef in the Five Participating States of the Kavango-Zambezi Transfrontier Area (KAZA-TFCA)*’ was posted in the public domain (www.wcs-ahead.org/workinggrps_kaza.html) and broadly distributed to key government partners. In addition, a report entitled ‘*Constraints to Conservation and Development Success at the Wildlife-Livestock-Human Interface in Southern African Transfrontier Conservation Areas: a Preliminary Review*’ was completed. These materials aided in identifying potential areas of conflict and incompatibility among the various sectors within and across member states, and were well received by regional officials.



Institutional mapping analyses. As ‘Beyond Fences’ was a new project operating in a new (for WCS) region of southern Africa, a clear understanding of the existing structures and major actors involved at the interface between wildlife conservation and livestock production was needed to ground effective engagement in the policy arena. Working with regional consultants, institutional mapping reports were completed for several of the countries we hoped to engage with more fully (Botswana, Namibia, Zimbabwe), and for the KAZA TFCA itself. The reports, completed in the early phase of the project, sought to answer structural, governance, and accountability questions, which when taken together with the stakeholder engagement we undertook, assisted us greatly in identifying key government institutions, other important stakeholders, and champions of various causes related to TFCA development and the control of TADs.

Networking and relationship-building. A critical factor in ‘Beyond Fences’ progress in the region was the early recognition that “process” matters, and matters greatly. As such, AHEAD dedicated significant effort to meeting with key influential people and stakeholders throughout the project. Working closely with regional contacts, we convened and/or participated in a series of partnership-building meetings in

Angola, Botswana, Namibia, South Africa, Zambia, and Zimbabwe, and engaged with key decision-makers within government ministries (including Environment and Agriculture) as well as with national park / protected areas officials, and a wide range of stakeholders across the TFCA. These meetings augmented understanding of the institutional dynamics of the TFCA and partner countries, and helped build networks and trust among stakeholders – a crucial aspect of ‘Beyond Fences’ in terms of creating an enabling environment for enhanced cooperation among sectors and authorities within TFCA partner countries.

While the original project focus was on the KAZA TFCA and OIE policy, greater traction was achieved early-on by scaling-up engagement with key multilateral organizations like SADC (SADC policies form the frameworks that member countries use as building blocks for their own policy development). In fact, the strong relationship we have established with the SADC Secretariat and its Food, Agriculture and Natural Resources (FANR) Directorate has proven to be extremely valuable in disseminating the ‘Beyond Fences’ message. In 2011, AHEAD was extended an open invitation to attend all future SADC Livestock Technical Committee (LTC) meetings, and over time, we have come to be viewed as an important regional NGO partner, and a unique ‘bridge’ for the flow of information between the conservation and livestock sectors. We continue to build on this relationship, and SADC remains a key ally in our efforts to effect meaningful change in animal health policy across the region.

In the United States, AHEAD staff also contributed significantly to achieving the goals of the ‘Beyond Fences’ initiative through the establishment of a strong and productive relationship with members of the diplomatic corps, especially those in the Botswana Embassy in Washington D.C. The meetings, presentations and discussions that have taken place have led to the development of a US-based network of SADC country diplomatic representatives who are now familiar with the issues being faced in KAZA and other parts of southern Africa and who are now keen to see policy change in their own countries. The value of such networking, in terms of enhancing high-level communications back to KAZA countries and in terms of interactions with USG agencies in Washington, cannot be overstated.

Convening and attending multidisciplinary workshops and meetings. AHEAD continues to make great progress strengthening relationships with national, regional, and international agencies and political decision-makers, and has established itself as a recognized and respected scientific partner in the region. These interactions advanced our ability to promote implementation of new approaches to conservation and livestock disease management, and set the stage for the dialogue required to effect policy change aimed at a more rapid rural development trajectory. While numerous formal and informal consultative fora were held during the course of the project, the examples below illustrate the importance of such meetings in addressing the challenges at the interface between conservation and animal health policy.

In 2012, AHEAD staff attended the FAO/OIE Global Conference on FMD Control in Bangkok. This was an extremely positive meeting for southern African delegates and represented great progress in terms of our work. In large part due to AHEAD efforts, including AHEAD participation in FAO/OIE consultative meetings in Paris earlier that year, non-geographic alternatives (meaning those disease control methods that don’t require fencing) to zonation, including commodity-based trade, were well recognized during the conference. It was also generally acknowledged that in certain areas of southern Africa, southern African FMD viral strains are not eradicable (without killing all African buffalo) and that global elimination of FMD as originally envisaged by some might well not be technically feasible. (Until this meeting these concepts were not widely recognized nor publically acknowledged by the international community.) These breakthroughs enabled our regional collaborators and colleagues to begin to explore in earnest the disease management options we had been able to highlight through our ongoing policy work.

In 2012, AHEAD attended the Great Limpopo Transfrontier Park (GLTP) Joint Management Board Meeting. The board requested our input on animal health policy matters and chose to utilize our policy and legislation report as a foundation for their own study on policy harmonization in the larger 100,000 sq. km. GL TFCA. Following this, the GLTP Veterinary Committee released a statement endorsing non-geographic approaches that are compatible with biodiversity conservation, such as commodity-based trade, as a way of ameliorating the trade impacts of TADs like FMD in southern Africa. This is particularly relevant as the Great Limpopo was the first landscape AHEAD became active in, starting in 2003.

In 2012, at the request of the KAZA Secretariat, AHEAD assisted in convening the first meeting of the Animal Health sub-Working Group of the KAZA Conservation Working Group in Calai, Angola – a meeting that brought wildlife and agricultural stakeholders to the same table. While provision for such specialized working groups was not maintained under the subsequent KAZA TFCA Treaty, the KAZA Secretariat recently noted the importance of the work that AHEAD is involved in at the wildlife / livestock interface and our willingness to provide support towards revitalizing similar working groups in the future.

In 2012, we worked with SADC to prepare and convene a pivotal regional meeting. The Joint SADC-AHEAD Workshop on *'Reconciling Livestock Health and Wildlife Conservation Goals in Southern Africa: Strategies for Sustainable Economic Development'* and the SADC Transboundary Animal Diseases Project Scientific Symposium on *'Foot and Mouth Disease in SADC'* was held in November 2012 in Botswana. Close to 100 invited delegates with expertise in livestock agriculture, wildlife conservation, and other sectors converged at this forum in order to map out next steps for optimizing cross-sectoral land-use planning in the interest of resilient livelihoods and development success that is economically, socially, and ecologically sustainable over the long term. We also worked with SADC to help facilitate the dissemination of a major policy product that came out of the 2012 forum, *'The Phakalane Declaration on Adoption of Non-Geographic Approaches for Management of Foot and Mouth Disease.'* The key outcomes of the meeting are succinctly captured in The Declaration, which can be downloaded at http://www.wcs-ahead.org/phakalane_declaration.html. Such policy approaches will assist in providing an integrated solution to the incompatibility that exists between current fencing-based regulatory approaches to the control of TADs and SADC's own vision of vast transboundary conservation landscapes in southern Africa, within which wildlife migrations are restored and livelihood opportunities diversified.



Symposium and workshop delegates, Botswana, 2012

While we continued to focus efforts on collaboration, partnership and dialogue with key multilateral entities that focus on agriculture (SADC LTC, OIE, FAO), we also made significant progress in strengthening relationships with top-level wildlife-focused government officials in Botswana. As a consequence of ongoing health challenges at the interface among wildlife, people and their livestock, Botswana has emerged as an especially important TFCA partner. Following discussions with Botswana's Department of Wildlife and National Parks (DWNP), and in recognition of the importance of wildlife / livestock interface issues, AHEAD was asked to assist in convening a scientific forum for TFCA-focused researchers working in Botswana. Co-hosted by AHEAD, the '*Botswana Wildlife Research Symposium: Bridging the Gap between Conservation Science and Management*' was held in February 2014. Over 200 invited delegates attended this forum to present and discuss ongoing research and assist DWNP in mapping out future priority areas for research and management. Key recommendations underscored the need to promote system wide approaches to wildlife conservation across landscapes to ensure that critical wildlife corridors were linked. Fencing issues featured prominently throughout the meeting, and the ongoing need to foster collaboration between sectors to address animal health policy issues was discussed.

Strategy 2: Identify alternate non-geographic transboundary animal diseases (TADs) management options (ones that don't rely on current fencing approaches) / analyze alternative scenarios

At the start of the SCAPES project, alternatives to veterinary cordon fences for the control of TADs were not being seriously considered by the animal health community. Over the past five years, however, a diverse array of sectoral stakeholders in southern Africa has expressed considerable interest in examining the alternative approaches to animal disease management identified by AHEAD and partners, relying on AHEAD for more detailed, robust sector-specific data. Through 'Beyond Fences' leadership and technical support, the regional knowledge base has been significantly strengthened.

Status of TADs and current control measures. Using information available in the public domain, we completed an analysis of the current and historical incidence and distribution of TADs in the SADC region. The survey confirmed that the information available in the public domain unfortunately remains incomplete for many important diseases. However, the report provided an overview of the major disease events (2005-2011), and summarized control measures currently adopted including wildlife-related aspects and policies or practices that may be in conflict with TFCA development (the report, '*Analysis of the Status of Transboundary Animal Diseases and Their Control in the SADC Region During the Period 2005-2011, Focusing on the Five Countries that Contribute Land to the Kavango Zambezi (KAZA) Transfrontier Conservation Area (TFCA)*,' is available at http://www.wcs-ahead.org/workinggrps_kaza.html).

In light of the importance of FMD in the SADC region (numerous outbreaks were reported to the OIE throughout the project period), AHEAD also partnered with regional and international FMD experts to develop the third and fourth in a series of thought-provoking bulletins focused on the status of FMD in southern Africa (<http://www.wcs-ahead.org/fmd-bulletins.html>). The reports, written in a non-technical format, provide explanatory information including interpretation of laboratory results to help better inform those involved in animal health management in the region.

Explore alternative options and outcomes for control of transboundary animal diseases (TADs) in relation to TFCAs. Over the course of the project, AHEAD and partners have been engaged in the development of alternatives to geographic standards for the safe trade in livestock. One of the challenges is the fact that the standards for management of animal disease hazards as they affect international trade (diseases like FMD) falls under the umbrella of the OIE, while standards for human diseases related to food safety are managed by an entirely separate international bureaucracy under the Codex Alimentarius Commission (administered under UN auspices via FAO and WHO). Much of our

work is about promoting an *integrative streamlining* of these two separate regulatory mechanisms – which are both really about the same thing – the mitigation of potential biological hazards. Successful integration of these two international regulatory mechanisms would actually greatly facilitate the commodity-based trade approach for beef (and thus mean less reliance on environmentally damaging fencing). Moreover, while the OIE has begun to introduce equivalent standards that are not entirely geographic (such as compartmentalization and commodity-based trade), requirements outlined in the TAHC (specifically Article 8.7.25 [previously 8.5.25], clause 1.d) render them impossible to implement in areas where FMD is endemic in wildlife (see Box 2).

Box 2: Article 8.7.25 of the OIE Terrestrial Animal Health Code

Recommendations for importation from FMD infected countries or zones, where an official control program for FMD, involving compulsory systematic vaccination of cattle exists for fresh meat of cattle and buffaloes (*Bubalus bubalis**) (excluding feet, head and viscera). *Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that the entire consignment of *meat*:

1. Comes from *animals* which:

- a) have remained in the *exporting country* for at least 3 months prior to *slaughter*;
- b) have remained, during this period, in a part of the country where cattle are regularly vaccinated against FMD and where official controls are in operation;
- c) have been vaccinated at least twice with the last vaccination not more than 12 months and not less than one month prior to slaughter;
- d) were kept for the past 30 days in an establishment, and that FMD has not occurred within a ten-kilometer radius of the establishment during that period;
- e) have been transported, in a vehicle which was cleansed and disinfected before the cattle were loaded, directly from the establishment of origin to the approved abattoir without coming into contact with other animals which do not fulfill the required conditions for export;
- f) have been slaughtered in an approved abattoir:
 - (i) which is officially designated for export;
 - (ii) in which no FMD has been detected during the period between the last *disinfection* carried out before *slaughter* and the shipment for export has been dispatched;
- g) have been subjected to ante-mortem and post-mortem inspections for FMD with favorable results within 24 hours before and after slaughter;

2. Comes from deboned carcasses:

- a) from which the major lymphatic nodes have been removed;
- b) which, prior to deboning, have been submitted to maturation at a temperature above + 2°C for a minimum period of 24 hours following *slaughter* and in which the pH value was below 6.0 when tested in the middle of both the *longissimus dorsi*.

*Asian water buffalo

To overcome this, AHEAD worked with regional experts to analyze how non-geographic sanitary risk management approaches (specifically commodity-based trade [CBT] and hazard analysis critical control points [HACCP]) could be effectively integrated to manage biological risks (both animal infections and food safety) along value chains to ensure safe exports. No such integrated analysis had been undertaken previously, and this work helped to identify international animal disease management / trade standards that could impact the long-term success of TFCAs in southern Africa, and potential integrative ways forward. With a goal of disseminating regionally appropriate policy recommendations

to an expanded audience, AHEAD and partners used the information in this review to draft two policy-focused manuscripts, which were published in the journal '*Transboundary and Emerging Diseases.*'

Thomson, G. R., Penrith, M.-L., Atkinson, M. W., Thalwitzer, S., Mancuso, A., Atkinson, S. J. and S. A. Osofsky. 2013. International Trade Standards for Commodities and Products Derived from Animals: The Need for a System that Integrates Food Safety and Animal Disease Risk Management, *Transboundary and Emerging Diseases*, vol. 60: 507–515. <http://dx.doi.org/10.1111/tbed.12164>

Thomson, G.R., Penrith, M.-L., Atkinson, M.W., Atkinson, S.J., Cassidy, D. and S.A. Osofsky, 2013. Balancing Livestock Production and Wildlife Conservation in and around Southern Africa's Transfrontier Conservation Areas. *Transboundary and Emerging Diseases*, 60: 492-506. <http://dx.doi.org/10.1111/tbed.12175>

These papers offer a relatively straightforward way to rethink more than half a century of policy when it comes to the trade in beef, an approach we consider potentially groundbreaking in terms of its implications for sustainable land-use in southern Africa and a cross-sectoral win-win. The first paper makes the case for integrating the management of food safety and animal disease risk along value chains, thereby offering a commodity-based alternative to currently favored geographic or 'zonal' management systems (which rely on fencing systems). The second paper builds on these principles, and describes the key challenges to practical implementation of such systems and offers a mechanism for making progress in achieving balanced rural development in southern Africa. The thinking behind these papers contributed to the genesis of the Phakalane Declaration (http://www.wcs-ahead.org/phakalane_declaration.html), a groundbreaking document, the objectives of which were recently recognized by the Director General of the OIE as being aligned with those of the OIE. Information from these papers, and various reports completed throughout the life of SCAPES, have been widely shared with key regional and international stakeholders, and these key information products have solidly positioned us to be able to advise on policy modifications.



Draft oxen in the Mashi Conservancy, Zambezi, Namibia. Photo: Mark Atkinson/WCS AHEAD

AHEAD also contributed technical assistance and wildlife expertise to the recently completed MCA-funded '*Development of Export Opportunities for Beef Products from the Zambezi Region*' study in Namibia. This has been a particularly relevant and timely project – while stakeholders in the region recognize that effective alternative disease management options / trade standards now exist, alternative

approaches are only just starting to be field tested. This commodity-based trade initiative has significant potential to positively impact rural development opportunities in KAZA and the larger southern African region. It is expected, for example, that benefits from the Zambezi project could ultimately exceed N\$ 24 million per annum. Prior to this project, no blueprint existed to support 'on the ground' operationalization of commodity-based trade. This project aimed to demonstrate 'proof of concept' and provide practical guidelines to be adopted (and adapted) by the Namibian livestock industry. The study was recently completed, and while formal, final approval of policy recommendations arising from the project is still pending, preliminary approval from the Namibian Directorate of Veterinary Services was received. Specifically, in April 2014, Dr. Tina Shilongo (Deputy Chief Veterinary Officer, Ministry of Agriculture, Water and Forestry) publically endorsed the project findings stating, "*Namibia's Directorate of Veterinary Services fully supports commodity-based approaches and will use the outcomes of this study to help alleviate the hardships of farmers.*"

Comprehensive socioeconomic analysis. In 2013, AHEAD and partners, including WWF-Namibia, completed a comprehensive cross-sectoral socioeconomic study on FMD management options (traditional geographic versus non-geographic scenarios) and projected development outcomes in the KAZA TFCA. Using cost-benefit analyses and resource-use models, the goal of this quantitative study was to define policy approaches that might positively influence beef market access and optimize land-use choices in the KAZA region to sustainably enhance livelihoods while minimizing cross-sectoral conflicts. The report, '*Economic Analysis of Land Use Policies for Livestock, Wildlife and Disease Management in Caprivi, Namibia, with Potential Wider Implications for Regional Transfrontier Conservation Areas,*' is a significant milestone, as it's the first analysis ever done of the socioeconomic implications of key land-use choices related to livestock agriculture and wildlife conservation for a SADC TFCA.

In addition to this study, a complementary but parallel multi-criteria decision analysis (MCDA) was conducted in partnership with United States Department of Agriculture (USDA) colleagues working on Sanitary and Phytosanitary (SPS) issues. AHEAD consultants provided requested animal health expertise for this study undertaken by the USDA Foreign Agricultural Service and USAID.

While these two studies were undertaken separately, they reached remarkably convergent conclusions. They looked at new commodity-based, value chain approaches to beef trade that focus on the safety of the process by which products are produced rather than on the geographic area from which the beef originated (i.e. whether a given cow was raised in a location where wildlife like buffalo also live). This food safety-type approach offers the potential for export of meat products that are scientifically demonstrable as safe from animal diseases for importing countries, while also diminishing the need for at least some of the veterinary fencing currently aimed at separating livestock and wildlife and constraining SADC's vision for regional transboundary wildlife conservation. The two reports conclude that a new value chain-focused approach to animal disease management has the potential to be a real win-win opportunity for both local and regional livelihoods, as well as for wildlife conservation. We have made these studies available in the public domain (http://www.wcs-ahead.org/kaza/kaza_additional_resources.html), as they merit thorough scrutiny by stakeholders at all levels interested in and responsible for making sure land-use planning in southern Africa is socially, ecologically, and economically sustainable for generations to come.

Strategy 3: Inform and influence cross-sectoral policy responses that support both TFCAs and livestock production as complementary components of rural development

Over the past five years, 'Beyond Fences' has iteratively built on the knowledge gained through the first two strategies, thereby providing a basis for making animal disease control policy recommendations.

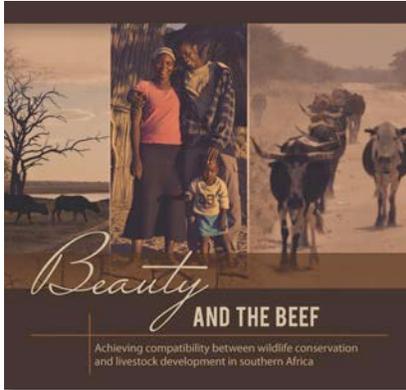
Establishing awareness, visibility and outreach. Dissemination of information is key to AHEAD efforts. We have increased our communications and outreach through production of a series of AHEAD Update e-newsletters, and additions to the AHEAD website. This has helped increase visibility and awareness of the relevance of animal health policy issues in KAZA and for the 'Beyond Fences' project. In addition, a range of 'Beyond Fences'-related resources have been incorporated via easily utilized hotlinks into the broader AHEAD Update e-newsletter, which is emailed to more than 2,500 regional and international stakeholders approximately four times a year, and plays a huge role in maintaining awareness of our efforts. For example, following our announcement of the Phakalane Declaration's availability in January 2013, the AHEAD website received more than 700,000 hits in just a few short months. These Updates have been archived for easy access at <http://www.wcs-ahead.org/newsarchive.html>, with the current AHEAD Update always being available on the AHEAD homepage at <http://www.wcs-ahead.org>.

To reach targeted audiences, 'Beyond Fences' also produced a project brochure in both English (<http://www.wcs-ahead.org/documents/beyond-fences-120523.pdf>) and Portuguese that could be shared in print or electronic format; and results of our analytic work have been made available through the AHEAD website (http://www.wcs-ahead.org/kaza/kaza_additional_resources.html). Key scientific and policy documents were also shared with interested stakeholders via the open-source digital AHEAD library maintained at Zotero (<http://www.zotero.com>). Finally, to supplement our range of written materials, an AHEAD Kavango Zambezi photo gallery, viewable at <http://markwatkinson.zenfolio.com/> has been developed.

Present project ideas, results and approaches to select audiences. AHEAD and regional partners are building a unique and rapidly growing knowledge base to draw upon when evaluating alternative approaches to reconcile the management of TADs in the context of TFCA. To facilitate broad dissemination of ideas, results and approaches, project staff continue to present findings at relevant conferences and meetings and use these opportunities to highlight animal health policy challenges, objectives and developments in the region.

Producing and disseminating policy briefs; facilitating the transfer of technical expertise. Policy analyses, papers, and other relevant findings resulting from studies undertaken during the earlier part of the project have assisted in informing policy recommendations for animal disease control strategies in TFCA member states.

Facilitating the transfer of relevant findings is an important component of our work, and the third AHEAD Update of 2014 featured an exclusive AHEAD Update interview with the OIE Director General Dr. Bernard Vallat. In this interview, Dr. Vallat acknowledged the impact of FMD *control measures* on both wildlife and domestic livestock, and recognized that efforts to control the disease need to be regionally and locally appropriate. He also noted that the socioeconomic importance of wildlife should be considered, and that SADC countries should be encouraged to involve both livestock and wildlife sector stakeholders (at national and regional levels) when deciding on a long-term and sustainable strategy for implementing animal disease control. This revealing interview further highlighted that the OIE does now officially recognize commodity-specific procedures that can be applied along the beef value chain to effectively inactivate FMD, and that such approaches are directly applicable to countries not recognized as being free from FMD.



AHEAD also provided significant technical assistance on the production of a DVD entitled ‘Beauty and the Beef: Achieving Compatibility between Wildlife Conservation and Livestock Production.’ This 20-minute film actually took several years to produce. It has been one of the most successful communications tools we have used to highlight the challenges a multi-use landscape like KAZA presents, and emphasizes the extremely important human dimension of our work. More than 300 copies of the DVD have been distributed to regional and international stakeholders, and we continue to present it to select audiences in Africa and the US. The video is also freely available for viewing via the AHEAD website (<http://www.wcs-ahead.org>).

On a number of occasions, AHEAD was also asked to provide high-level technical input to inform the animal health policy debate in southern Africa. For example:

- The OIE’s TAHC chapter on FMD (8.7) is currently being rewritten, with a final version expected in May 2015. In 2013, the SADC Secretariat, recognizing deficiencies in the chapter, requested AHEAD technical assistance in conducting a critical review of the chapter update. Working closely with regional partners and the SADC Secretariat, AHEAD played a pivotal role in the review process which looked to address inconsistencies in the chapter, identify specific articles that disadvantage southern African countries where FMD is endemic, and make suggestions for improvement. Comments have been received by the OIE and will be considered during development of the updated chapter.
- Another potentially significant development in terms of uptake of ‘Beyond Fences’ ideas took place in 2014. Our engagement with the Botswana Institute for Development Policy Analysis (BIDPA) is seeing positive policy traction towards implementation of value chain / commodity-based trade projects in Botswana. Last year BIDPA was tasked by Botswana’s Parliamentary Select Committee on Beef with analyzing the recent dramatic decline of the beef industry in Botswana and recommending a way forward. BIDPA requested AHEAD’s assistance in gaining a better understanding of FMD- and wildlife-related issues in the context of the country’s beef industry. Their 2014 report to the Parliamentary Select Committee on Beef highlights the challenges of going with the old geographic (fence-based) approach in places like northern Botswana (parts of which lie within the KAZA TFCA), and the need to seriously consider the non-geographic approaches laid out in the Phakalane Declaration. Specifically, in their conclusions on policy options, BIDPA notes:

“The policy currently being applied [managing FMD through a geographic zonal approach with fencing] is a clear failure and repeated attempts in that direction are an obvious recipe for disaster. Furthermore, the current policy is disastrous from a biodiversity conservation and associated enterprises perspective. In Botswana today these generate more foreign income for the country than beef exports to the EU. For that reason integration of livestock and biodiversity conservation policies is vital. The bottom line is that ‘more of the same’ is not an intelligent option. ...Botswana needs to work with other countries that have embraced the Phakalane Declaration and attempt to move to commodity-based trade which would allow Botswana to deal with FMD on a more effective basis that focuses on the value chain approach.”

Liaising with national, regional and international agencies to foster implementation of identified win-win conservation and disease management policy options and opportunities. AHEAD staff have continued to build and strengthen relationships with national, regional and international agencies and

entered into high-level discussions with political decision-makers in the region, Paris (OIE) and in Washington D.C. These interactions have progressed our ability to foster implementation of new policy approaches to conservation and disease management. For example:

- Following the 2012 Joint SADC/AHEAD workshop, AHEAD attended the SADC LTC annual meeting where discussion focused on the Phakalane Declaration. LTC members enthusiastically supported the Declaration and endorsed it.
- Engagement with the Botswana Ambassador to the US and BIDPA led to two invitations to testify before the Botswana Parliamentary Select Committee on Beef. In July 2013, one of AHEAD's lead consultants delivered a presentation on FMD, international trade standards, and current limitations of FMD vaccination, and in August 2013, AHEAD staff briefed the Parliamentary Committee on alternative non-fence based approaches to FMD management. This represents an extremely important milestone for 'Beyond Fences' as our message and core ideas on value chain disease risk management and commodity-based trade continue to reach the highest levels of government in key SADC and TFCA member states.
- In 2013, the OIE Working Group on Wildlife Diseases invited AHEAD to provide input on the issue of TADs management and control in the context of southern Africa. The OIE acknowledged AHEAD's important role in this arena and stated that they would consider information highlighted in our recently published papers in the journal *'Transboundary and Emerging Diseases'* as they worked to update relevant policy guidelines for trade in livestock.
- In 2014, at the request of SADC LTC meeting organizers, AHEAD technical consultants and others, presented results of the recently completed *'Development of Export Opportunities for Beef Products from the Zambezi Region'* project during a dedicated session at the annual meeting. The LTC noted that the project clearly demonstrated that value chain approaches based on commodity risk mitigation were feasible in areas like the KAZA TFCA, and facilitated the co-existence of livestock production and wildlife conservation. Furthermore, LTC members enthusiastically supported the outcomes of the project, and resolutions of the committee included that SADC member states accept and commit to implementing national commodity-based, value chain approaches to managing disease risk. This uptake of ideas is particularly relevant, as up until AHEAD's engagement, the LTC, representing perhaps the most influential governmental stakeholders of relevance, had not fully considered nor begun to address the implications of the incompatibility between current wildlife conservation goals and livestock policies within the context of TFCAs. Moreover, southern Africa's livestock sector is now looking beyond veterinary fencing to deal with FMD. Thus, SADC's vision for the restoration of major wildlife movement corridors and development of TFCAs for the region's unique and spectacular biodiversity, including the world's largest population of elephants, indeed has a chance of being realized.

CHALLENGES

- Regional partner organization's funding constraints: the operational budgets for many organizations and departments have been reduced.
- Turnover of key government and multilateral staff has led to loss of institutional memory and delays in meetings and follow-up.
- As a result of budget constraints, the project could not be sufficiently staffed to fully meet the requirements for effectively working across five countries and multiple regional and international

organizations; nor were we equipped to respond to an ever-increasing number of requests for technical support across the multi-country policy SCAPE.

- Alternatives to current animal disease management practices now exist; with no other organization focusing on this highly specialized suite of issues, AHEAD has taken on a leadership role in the provision of technical expertise and policy guidance, and regional entities such as SADC as well as OIE have depended on us to provide this input. Without further funding at the end of SCAPES, these activities will not be able to continue at the same level.

LESSONS LEARNED

Changing land-use policies that have been in place for more than 50 years is necessarily a slow process and will of course take place outside of the 5-year timetable of SCAPES; however, the significant achievements described above have occurred much earlier in the process than we anticipated, reflecting a surprisingly rapid uptake of ideas by SADC and our other regional partners.

- *Policy change requires time, patience and persistence.* Our years in southern Africa in the Great Limpopo TFCA (before SCAPES), with AHEAD working to focus regional colleagues on the importance of the interface issues at hand, have surely helped lay a significant foundation for some of the successes we are already seeing within the SCAPES context. However, changing policy 'hearts and minds' is extremely time consuming.
- *Biodiplomacy and objectivity are critical.* Project success is linked to staff skills in diplomacy and the implementing partner (WCS-AHEAD) being recognized as an 'honest broker' working with multiple sectors, each with acknowledged vested interests.
- *Early identification of champions influences long-term success.* Recognizing the importance of support from respected individuals representing both the wildlife and livestock sectors lent credibility to the project and allowed for policy progress to be made more rapidly.
- *Transaction costs are high.* The transaction costs (meetings, travel, communications, individual contacts and repeated follow-up) associated with building the personal relationships needed to encourage policy change should not be underestimated.
- *Budgetary constraints impact success.* Complementary project funding by the Rockefeller Foundation and USFWS have been essential for supporting needed staff and for the purchase of a project vehicle.
- *Effective communication is critical.* The project's communication activities (AHEAD Update quarterly e-newsletter, AHEAD website) have been essential in terms of maximizing the impacts of the project's limited staffing.
- *Multi-stakeholder collaboration is a prerequisite for success.* The major focus of collaboration, partnership and dialogue has been with representatives from key multilateral agriculturally-focused entities (OIE, FAO, SADC LTC). Focusing on livestock agriculture through engagement with these multilateral bodies has provided much of the necessary traction needed to effect positive change of direct relevance to conservation.

SUSTAINABILITY

- *Ecological.* Policy makers now have a greater understanding of an alternative disease management approach, which if implemented may allow some veterinary cordon fences to be removed / realigned, and reduce overall dependence on veterinary fencing in the future. Removal of these

fences will facilitate enhanced connectivity of wildlife populations across landscapes such as KAZA – also crucial in terms of adaptive responses to climate change.

- *Social.* We now see enhanced cooperation and cross-sectoral dialog between the wildlife and agricultural sectors and have built a network of informed stakeholders willing to come together to consider and endorse new policy approaches related to stewardship of the land base they share.
- *Financial.* No other organization is focusing on this suite of issues and regional entities are relying on us to provide technical expertise and guidance. Being viewed as an honest broker and collaborative partner stands us in good stead to compete for potential donor support. However, at this time, we do not have new sources of funding. At the end of SCAPES, our work will have to be severely curtailed. Regional entities of relevance to this work also remain significantly resource constrained.

RECOMMENDATIONS FOR FUTURE ACTION

It is clear from our work to date in these vast and complex transboundary landscapes that we need to find ways to accommodate both wildlife and livestock systems in an integrated manner that will benefit rural communities (e.g. foster functional multi-species systems, diversified livelihoods, and new approaches to market access). The outcomes of the Joint SADC-AHEAD forum, the socioeconomic analysis for the Caprivi (recently remained Zambezi), the two influential and mutually reinforcing papers in *'Transboundary and Emerging Diseases,'* and engagement with key government stakeholders and multilaterals institutions (SADC, OIE, FAO) will play key roles in our desired continued engagement in the region. These accomplishments provide a springboard for operationalizing alternative approaches to animal disease management and land-use planning, and for informing cross-sectoral responses that support TFCA's while controlling TADs.



Livestock-wildlife interface, Chobe flood plain, border between Botswana and Namibia. Contact between cattle and wildlife increases the possibility of disease transmission in areas where resources are shared.
Photo: Mark Atkinson/WCS AHEAD

Alternatives to current animal disease management practices now exist; however, no other organization is focusing on this highly specialized suite of issues and regional entities are depending on us for technical expertise and guidance. Immediate and future priorities (pending new funding) are:

- Continued outreach and communications efforts, including dissemination of relevant findings that will help inform policy development.
- Continued collaboration, partnership and dialogue with representatives from key multilateral institutions such as SADC, OIE, and FAO (all three of which have endorsed the AHEAD program). It is with these multilateral bodies that much of the necessary policy traction is being attained.
- Facilitating discussions between the Governments of Botswana and Namibia (Veterinary Services and other government stakeholders) on potential realignment of the Caprivi Border Fence and Northern Buffalo Fence. Of the approximately 250,000 elephant in KAZA, more than 80% exist south of the Zambezi River in Zimbabwe and Botswana. For example: within Botswana, approximately 15,000 elephants in the Okavango Panhandle cannot access other parts of the TFCA because of the presence of veterinary fences, human settlements and the Okavango River. Arguably the most important movement corridor in KAZA, therefore, is the 30km Kwando Corridor – realignment of the Caprivi Border and Northern Buffalo fences would increase the corridor (bottleneck) from 30km wide to 100 km wide and release the ‘pressure valve’ created by this currently narrow corridor.
- Improving livestock marketing opportunities and socioeconomic options for rural farmers in Ngamiland District, Botswana, through innovative approaches to meat safety (technical assistance and guidance on the implementation of value chain, commodity-based pilot projects).

The convergence of a **renewed emphasis on food security and enhancement of livestock agriculture** in southern (and East) Africa and **the momentum of the transfrontier conservation movement** provides a once-in-a-generation opportunity to address land-use conflicts and inefficiencies that have been a barrier to economic development in many SADC countries for decades. Thoughtful technical and financial support by the USG and partners that proactively recognizes the policy linkages that ‘Beyond Fences’ has focused on could help catalyze some of the most exciting win-win opportunities, in terms of a sustainable balance between environmental stewardship and economic development, that the SADC region has ever seen.

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