





Report of the workshop held at

Chobe Marina Lodge, Kasane, Botswana



11 to 14 November 2008

Achieving compatibility between the Trans-frontier Conservation Area (TFCA) concept and international standards for the management of Trans-boundary Animal Diseases (TADs)



SADC FMD Project FANR, SADC Secretariat, Gaborone

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EXECUTIVE SUMMARY

Innovative approaches to controlling disease risks associated with the meat trade from both cattle and wild ungulates could usher in a new era of rural livelihood generation through enhanced compatibility between livestock rearing and wildlife conservation. This was the message which came from a ground-breaking workshop "Achieving compatibility between the Trans-frontier Conservation Area concept and international standards for the management of Trans-boundary Animal Diseases" that was held in Kasane, Botswana from 11th to 14th November 2008. The workshop was organised by the European Commissionfunded SADC Foot-and-Mouth Disease Project, supported by the United States Agency for International Development [USAID]. Expertise provided by delegates covered a broad spectrum of public and private sector wildlife ecology, animal health, socio-economic and development issues. Participants represented SADC member countries [Angola, Botswana, Congo Democratic Republic, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Tanzania and Zimbabwel, the SADC Secretariat, the European Commission, the Kaza TFC Area Secretariat, independent consultants and international organisations such as the World Organisation for Animal Health [OIE], the Food and Agriculture Organization of the United Nations [FAO], Animal Health for the Environment And Development (AHEAD), the Wildlife Conservation Society, the Wilderness Foundation and the USAID/Okavango Integrated River Basin Management Project. The workshop addressed the fact that transfrontier conservation areas [TFCAs] bring with them major advantages for wildlife conservation and biodiversity yet also present serious challenges from disease transmission between domesticated and wild animals which can impact negatively on marketing, especially into lucrative international markets. The growing reality of TFCAs provided the focus for the workshop, but the animal health issues, related to control of trans-boundary animal diseases [TADs], extend well beyond this with an expected beneficial effect on rural livelihoods from livestock production and wildlife utilisation throughout the SADC Region. The workshop delegates agreed to endorse and promote the concept of commodity-based trade [CBT] which enables trade in livestock and wildlife products to proceed safely whilst effectively delinking trade from area-wide disease status.

Workshop presentations and outcome

The prime reason for the workshop was to achieve a consensus of understanding between two conflicting groups – those concerned primarily with livestock production and trade in products derived from them and those concerned with wildlife conservation. The intention was to develop a vision for a future which benefitted both biodiversity conservation and healthy livestock development in order to facilitate sustainable rural development. The presentations which started the meeting introduced the key technical issues to inform subsequent discussion. They provided a situational analysis of trans-boundary animal diseases in general and within a SADC context; the TFCAs: status, challenges and opportunities; rural development and livestock: trends, challenges and opportunities; sustainable livelihoods and system health in Southern African TFCAs; international approaches to TAD management and trade in commodities derived from animals; fences and their effects in the SADC region; the beneficial effects and impacts of using fences as a control measure for animal diseases; and, cross-sectoral challenges and the TFCAs. The rest of the programme, designed to achieve tangible outputs, was conducted through working groups and plenary discussions which focussed-in progressively on priority issues and actions to address them.

By identifying practical, specific and priority actions to be implemented over the next two to three years to resolve the apparent impasse between the TFCA concept and international norms for animal disease management, the workshop achieved its prime objective of designing an enabling environment for a new synergy between livestock production and wildlife conservation.

Priority issues and actions identified

In summary, the elements of the strategy proposed relate to:

- Development of Training Aids and Courses: improving disease surveillance at the wildlife and livestock interface
- Winning Friends and Influencing People: developing a broad base of support at the regional and international levels for CBT generally, and de-boned beef from SADC specifically, for adoption by OIE
- Information Sharing and Cross-Sectoral Dialogue Among Stakeholders for TFCAs: to bring the full range of stakeholders for a given TFCA together to facilitate successful TFCA implementation ("AHEAD process")
- Development of a Marketing and Investment Plan: developing a mechanism for attracting investors (public and private) in TFCAs
- A Case Study of Disease Control Strategies in One TFCA: to illustrate issues, processes to consider in developing and refining disease control strategies for wildlife and livestock
- Ensuring Availability of Efficacious and Safe Vaccines: to ensure effective disease prevention and control

The main areas of conflict between biodiversity conservation and trade in products derived from livestock

The most severe constraint to trading animal-derived products, primarily red meat, into lucrative international markets, such as that offered by the European Union, is the persistent circulation of three distinct Africa-specific foot-and-mouth disease viruses (designated as SAT 1, 2 and 3) in wild populations of African buffalo. For the last 50 years or more the risk posed by this endemic form of FMD has been managed by a combination of three methods, in compliance with guidelines set by OIE and the European Commission. These are:

- 1. Fencing to compartmentalise the countries concerned to prevent contact, and thereby FMD transmission, between buffaloes and cattle;
- 2. Systematic vaccination of cattle against the three SAT FMD viruses;
- 3. Processing of meat to reduce even further the risk of meat contamination (carcase maturation, deboning and deglanding).

Botswana provides an example of a country highly dependent historically on the meat export trade. In order to export animal-derived products, primarily beef, Botswana had to comply with severe animal health regulations which paid scant regard for wildlife concerns. The compartmentalisation-with-vaccination strategy enabled trade to proceed safely for many years although interrupted on occasion by outbreaks of FMD in cattle; these disruptions occurring repeatedly and increasingly in recent years suggest that the approach might no longer be sustainable. Although the full cost is not known, maintaining the *status quo* to sustain trade relative to the income generated is clearly a very expensive option, expensive not just in terms of the direct costs of disease control but also in its effects on the wildlife. Fifty years ago, wildlife seemed an inexhaustible resource but now it is well-recognised that fencing, developed to the extent it has been practised since the 1970s, has had a seriously detrimental effect on wildlife which are the basis of a highly profitable tourist industry, with dependent livelihoods, while preserving livelihoods based on livestock production and export.

Commodity-based trade

CBT is based on the concept that trade in a commodity, such as red meat, should relate to, and be governed by, standards concerning the commodity itself rather than the area within which the commodity has been produced, as applies to most other internationally-traded commodities. The essence is that providing an appropriate level of protection to consumers can be achieved provided that appropriate standards are created and adhered to. These standards ensure that only healthy animals are slaughtered and that a second level of protection is provided by appropriate processing of the commodity. Meat from both livestock

and wildlife could be covered by the same standards. The most pressing issue to be addressed is gaining full support of CBT from OIE and thereby developing standards to guide World Trade Organisation Sanitary-Phytosanitary Agreements to facilitate trade from SADC countries.

ACRONYMS

ACP	The African, Caribbean, and Pacific states associated with the European
	Union through the Lomé Convention
ADB	African Development Bank
AHEAD	Animal Health for the Environment And Development
COMACO	Community Markets for Conservation
CAHW	Community-based animal health worker
CESVI	Cooperazione e Sviluppo (an Italian humanitarian aid NGO)
CVO	Chief Veterinary Officer
DEAT	Department of Environmental Affairs and Tourism (South Africa)
DfID	Department for International Development, UK
DVS	Director of Veterinary Services
EC	European Commission
EIA	Environmental impact assessment
EMP	Environmental management planning
FANR	Food, Agriculture and Natural Resources (Directorate of SADC)
FAO	Food and Agriculture Organization of the United Nations
FMD	Foot-and-mouth disease
GAINS	Global Avian Influenza Network for Surveillance
GLTFCA	Greater Limpopo Trans-frontier Conservation Area
HPAI	Highly pathogenic avian influenza
ICP	International collaborating partner
IUCN	International Union for the Conservation of Nature
KAZA	Kavango/Zambezi Transfrontier Conservation Area
LTC	Livestock Technical Committee (SADC)
NEPAD	New Partnership for African Development
NGO	Non-governmental Organisation
OIE	World Organisation for Animal Health (Office International des Épizooties)
OKACOM	Okavango River Basin Water Commission
PPR	peste des petits ruminants
R and D	Research and Development
SADC	Southern African Development Community
SAT	South African Territories
SPS	Sanitary/phyto-sanitary
SEA	Strategic environmental assessment
TAD	Trans-boundary animal disease
TFCA	Trans-frontier Conservation Area
USAID	United States Agency for International Development
WCS	Wildlife Conservation Society
WHO	World Health Organization
WTO	World trade Organization

WORKSHOP PARTICIPANTS



BACKGROUND TO MEETING

The Southern African Development Community (SADC) Protocol on Wildlife Conservation and Law Enforcement of 1999 defines a Trans-frontier Conservation Area (TFCA) as "the area or component of a large ecological region that straddles the boundaries of two or more countries, encompassing one or more protected areas as well as multiple resource use areas". The Protocol commits the SADC Member States to promote the conservation of shared wildlife resources through the establishment of TFCAs.

The TFCA concept is widely acclaimed by those concerned with wildlife conservation as offering a means not only to conserve biodiversity in Africa but also to provide diversified livelihood opportunities from tourism and marketing of livestock products from domesticated and wild livestock. The benefits are clear, at least in principle, and attractive to those who see a future in rural livelihoods development related to wildlife and environmental conservation. As a result TFCAs are no longer a theoretical concept but are rapidly being translated into reality. At least 15 TFCAs have been established, are being established, or are conceived in the SADC Region (Figure 1) covering more than 1.2 million square kilometres and incorporating many national parks, neighbouring game reserves, hunting areas, conservancies and communal land in which the underlying principle is that there should be free movement of wildlife. However, establishing TFCAs and realising the potential benefits creates major problems, some of which have not yet been clearly conceived. Veterinarians concerned with safeguarding the health of domestic livestock in the context of export trade in meat to lucrative overseas markets are already facing severe challenges with respect to trans-boundary animal diseases and their effects on international trade. Given the specific problem arising from the wildlife reservoir of certain indigenous serotypes of foot-and-mouth disease (FMD) virus in Africa as well as those posed by other diseases for which wildlife/livestock interactions constitute a reservoir, there are serious concerns about the effects of TFCAs. The means of managing the FMD risk, which has relied strongly on fencing as well as vaccination of cattle, is a contentious issue because although it was highly successful, at least until recently, fencing is acknowledged to have deleterious effects on wildlife. Therefore the animal health issues resulting from the establishment of TFCAs provoke a confrontation which perhaps has not been given due attention until now. Other important issues to address relate to the human communities which are present within the TFCAs and the impact that wildlife has on their existing livelihoods, largely subsistence farming. It has been suggested that such issues have not been fully thought through in the TFCA planning. There are clearly a wide range of views on how the problems needs could be addressed to enable sound rural development of the region.

In order to start to address these issues, a workshop entitled Achieving compatibility between the Trans-frontier Conservation Area (TFCA) concept and international standards for the management of Trans-boundary Animal Diseases (TADs) was convened at the Chobe Marina Lodge in Kasane, Botswana for SADC Member States under the auspices of the SADC FMD Project with EU funding and the support of USAID. It was attended mainly by Directors responsible for the management of wildlife resources/TFCAs/ecosystem conservation, those responsible for the control of trans-boundary animal diseases (TADs) in the SADC Region and concerned independent organisations (see Annex 2 for a full list of participants and their contact details). By providing a forum for discussion in which the wildlife and animal health issues could be freely discussed, it was hoped that short term action plans for SADC could be identified and agreed by the end of the workshop, taking into consideration all relevant points of view.

The workshop comprised four sessions:

• Session 1: Opening and Introductions

- Session 2 Situational Analysis: TFCAs, TADs, fences and trade issues in the SADC Region
- Session 3: Lessons Learnt (Regional and International Cases)
- Session 4: Identification of Strategies, Proposals, Activities and Results

Presentations by invited experts were mainly limited Sessions 2 and 3. Presenters and the subjects were carefully selected to ensure that a practical outcome could be achieved. The number of didactic presentations was limited intentionally as was the length of each at 20 minutes with a ten minute discussion, in order to maximise the time available for working groups and plenary discussions aided by a workshop facilitator (see Annex 1 for the final meeting agenda).



Figure 1: Map illustrating the Trans-frontier Conservation Areas being established

SESSION 1: OPENING AND INTRODUCTIONS

Ms. Rapelang Mojaphoko, Coordinator, Research and Development, of the Ministry of Environment, Wildlife and Tourism in Botswana, opened the meeting on behalf of the Permanent secretaries for the Ministry of Environment, Wildlife and Tourism and the Ministry of Agriculture. She welcomed the participants who had been invited from 12 Member States of SADC and looked forward to fruitful discussions on the management of natural resources and resultant decisions and resolutions.

In his opening presentation **Dr Andrea Massarelli, SADC FMD Team Leader,** represented the SADC Secretariat to welcome the participants and apologise for the absence of a number of SADC officers who were prevented from participating by a meeting of SADC Ministers of Food, Agriculture and Natural Resources being held in Gaborone. The absentees had sent a message concerning the high importance of a meeting on sustainable

livestock development under the regional indicative development strategy agreed for the period up to 2015.

Speaking for the SADC FMD Project, he stressed that there could be a major problem in achieving compatibility between the two main interests represented at the meeting i.e. wildlife conservation and livestock production and trade. He explained that at least 13 TFCAs are in the process of being established in the SADC Region covering more than 1.2 million square kilometres and incorporating many national parks, neighbouring game reserves, hunting areas, conservancies and communal land. The stimulus for this came from the Peace Park initiative matched with identification by SADC that livestock production and trade has been identified as an important component of rural development, especially in arid and semi-arid areas. The underlying principle of TFCAs is that there should be free movement of wildlife over large geographic areas. However, he indicated that current international sanitary-phytosanitary (SPS) standards set by the World Trade Organisation (WTO) and guidelines have to be observed in the international livestock and meat trade and these are presently incompatible with the free movement of animals. Thus, the TFCA concept and management of TADs are apparently incompatible.

The principles underlying the control of trans-boundary animal diseases (TADs) (especially with respect to directly transmitted infections) are to prevent movement of susceptible animals between areas where TADs occur and areas where they do not, and to restrict trade in commodities derived from animals on the same basis. He proceeded to illustrate the problem by reference to the overlapping distribution of African buffaloes, cattle and human populations in the Greater Limpopo TFCA.

Dr Massarelli stated that the objectives of the workshop were fourfold:

- 1. To stimulate dialogue among government stakeholders on integration and coordination of TFCAs and livestock production so as to achieve sustainable rural development
- 2. To deepen shared understanding of current issues, trends, lessons learnt and potential opportunities
- 3. To draft a strategic agenda on how to move forward with visions, strategies and priorities identified
- 4. To propose policy initiatives for the SADC Secretariat and member states

The outputs of the workshop would be a report (available in English, French and Portuguese) containing its conclusions and a plan for the way ahead and actual initiation of agreed strategies.

Mr Gary Forbes, Workshop Facilitator, explained how the workshop was to be conducted under his guidance. Two groups of presentations were to be given addressing the current situation and perspective along with the lessons learnt in order to provide a common technical platform to inform discussions. The presentations would be followed by a reflection on the discussions. Following this, group work was intended to identify the main issues and identify new opportunities for coping with them. Three working group sessions were entitled Current Reality Dialogue, Shared Practical vision and Strategic Directives. The results of the working groups were then intended to feed into the process of prioritising actions for immediate attention with a 100 day perspective, capturing commitments that could be made and identifying the next steps to be taken i.e. follow-up tasks.

Only a brief summary of the presentations and discussions is provided here but the presentations are available on a compact disc from the SADC FMD Project. The presentations were grouped into two main sessions each comprising related subjects. **SESSION 2: SITUATIONAL ANALYSIS: TFCAs, TADs, FENCES AND TRADE ISSUES**

The papers in this session were:

- 1. Dr Roy Bengis representing OIE as President of the OIE Working Group on Wildlife Diseases
- 2. Dr P. L. Roeder Independent Consultant, former FAO Animal Health Officer

Trans-frontier Conservation Areas: some animal health challenges

Trans-boundary animal diseases: current international status and management approaches.

These two presentations dealing with TADs presented the current thinking about the way diseases behave at the interface between wildlife and domestic livestock populations set against a background of the alarming increase of disease epidemics occurring in farmed livestock worldwide. Dr Bengis pointed out that seven TFCAs were already established and a further 15 potential TFCAs have been identified by the Peace Parks Foundation (Figure 2).

The presentation of wildlife diseases within SADC extended across the spectrum of bacterial, viral and haemoprotozoal aetiology. Infectious diseases of wildlife were classified as being:

- Afro-endemic having evolved in and being native to the African continent frequently maintained by one or more traditional wildlife hosts [e.g. the SAT serotypes of FMD virus]
- Alien/exotic or newly emergent diseases which are present on most continents and are frequently highly pathogenic [e.g. anthrax and rabies]
- Alien/exotic or newly emergent diseases that have entered the African continent relatively recently and have the potential to impact significantly on wildlife and livestock populations [e.g. rinderpest, bovine tuberculosis and canine distemper]

The risk factors for disease transmission between wildlife and domesticated livestock relate to the type of ecosystem or eco-zone involved (very acid savannahs and high Afro-montane eco-zones carrying a lower risk as compared to tropical savannah) and, related to this, the wildlife species mix concerned. Different species pose inherently different disease risks. For example African buffalo provide a substrate for FMD, bovine tuberculosis, Rift Valley fever, brucellosis, theileriosis and trypanosomosis whereas Tragelaphids are associated with trypanosomosis, tuberculosis, anthrax, rabies and to some extent FMD.

The factors associated with TFCA development which increase the risk of TAD occurrence result from:

- Creating large contiguous populations
- Creating biological bridges for animal and disease movement over relatively long distances
- Expansion of the geographic range of a pathogen or vector
- Increasing the size of the wildlife/livestock interface



Figure 2: the actual and potential TFCAs identified by the Peace Park Foundation

The TFCA disease risks were illustrated with reference to the Greater Limpopo Frontier Park which is a lowland savannah ecosystem with a sub-tropical climate where most disease maintenance hosts are present. The risks vary from country to country:

- For Zimbabwe for both livestock and wildlife: new topotypes¹ of FMD virus from Kruger National Park, bovine tuberculosis from the Kruger National Park and cyclical anthrax epizootics
- For Mozambique for livestock: wildlife-associated infections from Kruger National Park [FMD, African swine fever, bovine malignant catarrh, theileriosis, bovine tuberculosis]; for wildlife: bovine tuberculosis from Kruger National Park, rabies and distemper from local domestic dogs
- For South Africa (Kruger National Park): tse-tse fly and trypanosomosis from Gonarezhou National Park, rabies and canine distemper from Limpopo National Park

The international presentation included some examples of viral epizootic diseases which threaten southern African farming e.g. exotic FMD viruses, highly pathogenic avian influenza

¹ A topotype is a clade of viruses which are genetically closely related and have a distinct geographical distribution

(HPAI), PPR and Pig High Fever Disease. In the context of the TFCAs it is fortunate that there is growing certainty that rinderpest has been eliminated from the continent for its presence would have constituted a very serious constraint to TFCA development.

Anomalies in the way that diseases are treated at the international regulatory level were described. For example the presence of buffaloes carrying FMD viruses results in a country being designated as diseased and trade can only take place from zones from which the virus is excluded by stringent zoo-sanitary procedures whereas, in sharp contrast, the presence of highly pathogenic avian influenza in wild birds is not considered to require emergency reporting and does not necessarily affect trade.

Common to both presentations was the understanding that currently existing surveillance systems are inadequate for the task of rapidly detecting the introduction of new disease agents or a significant change in the epidemiology of endemic diseases, this being essential for effective control of epizootic diseases. Outbreaks of the major epizootic diseases in livestock are dealt with by a combination of culling, movement control, focal emergency vaccination and preventive vaccination. All need to be employed in area-wide elimination programmes and the approach taken was described briefly with reference to rinderpest which, until recently, repeatedly dealt devastating blows to both cattle and wildlife. It was eradicated only by concerted international efforts over more than 50 years; success was achieved when control programmes were coordinated internationally and focused by improved epidemiological understanding. With certain notable exceptions such as parts of southern Africa, the control of the major TADs is largely ineffective and is not likely to improve. Sequestration of wildlife combined with preventive vaccination of cattle has worked well in certain SADC countries in the past to manage the risk from the buffalo reservoir of FMD, yet recent experience does not provide confidence that success can be sustained for a number of reasons relating to cost and availability of effective vaccines and social acceptance.

In the current circumstances it is difficult to envisage how countries can pursue the concept of achieving and maintaining disease freedom in order to trade, especially as collapse of control in one country compromises a whole region, as is readily apparent in the recent history of FMD occurrence in Botswana and other SADC countries. There seems to be little prospect of SADC countries being able to create disease-free zones to cope with trade impacts of all the diseases which are present, even for just FMD and Rift Valley fever, in the existing situation let alone after the establishment of TFCAs.

In order for livelihood development to result from TFCA development then pro-active planning and development of appropriate disease surveillance, monitoring and management strategies will be needed. Possible actions include land use planning on national and regional scales; building perimeter fences and establishing control zones to separate areas with differing land use; establishing immune barriers by vaccination of livestock; improving disease and vector surveillance and monitoring; and, building the concept of commodity-based trade (*vide infra*)..

It was concluded that a new paradigm is needed which enables trade in safe products to take place and provide the stimulus for the progressive control of important diseases to reduce their impact on production and trade – a more equitable solution to the trade issues.

The discussion which followed sought to clarify the epidemiology of a number of diseases of wildlife such as the trypanosomes carried by zebras, the relatively minor role of impalas in FMD transmission and the role of the equatorial forest buffalo in acting as a FMD reservoir. It appears that there have been no surveys for FMD carriage in the forest buffalo subspecies.

The role of OIE standard setting in assisting the process of disease control related to TFCA development was explained to be through the conceptualisation of guidelines for compartmentalisation and zonation as well as through convening the Wildlife Group which is striving to bring wildlife into the Animal Health Code and the Manual of Diagnostic Tests and Vaccines. The public appreciation of animal welfare issues relating to capture for relocation and population management were raised as a potential problem in operating TFCAs.

Mr Sedia Modise KAZA TFCA Regional Coordinator, Botswana

Overview of TFCAs in the SADC Region: status, challenges and opportunities

Mr Modise opened his presentation by referring to the fact that countries had been defined without reference to ecological issues such as the flow of rivers, the circulation of air and the movement of animals and stressed that natural resources spanning borders are a joint responsibility from which neighbours should derive equitable benefits. The TFCA concept is not exactly a new one globally as there are 188 TFCA complexes covering 113 countries world-wide including the world-renowned Glacier-Waterton Trans-boundary Park between Canada and the USA, established in 1932. The SADC Protocol on Wildlife Conservation and Law Enforcement defines a TFCA as "the area or component of a large ecological region that straddles the boundaries of two or more countries, encompassing one or more protected areas as well as multiple resource use areas". Enabling instruments include the SADC Wildlife Policy and Development Strategy, 1997, and the SADC Protocol on Wildlife Conservation and Law Enforcement, 1999 which complement international conservation conventions such as the African Convention on Nature and Natural Resources (1968, the UNESCO Manual and the Biosphere Programme (1971), the Convention on Wetlands (1971), the World Heritage Convention (1972), CITES (1973), Convention on Migratory Species (1979) and the Convention on Biological Diversity (1992) as well as conforming to the spirit and intent of the New Partnership for African Development (NEPAD).

The objectives of TFCAs are to harmonise the policies, strategies and practices for managing natural resources along international boundaries in order to enhance the conservation of endangered ecosystems and species, promote the integration of regional economies through the development of tourism and improve the standard of living of rural communities. Each is unique being negotiated by multi-lateral planning teams of government and non-government stakeholders. Thus, a pre-requisite is political buy-in and social acceptance by local communities and the private sector because it is the local communities which have to pay the opportunity costs of living with the wildlife resources being protected. Financial resources are the major limiting factor but it is the obligation of governments to support the TFCAs as conservation programmes financially and by creating a conducive policy and legislative environment for their establishment with support structures at site, district, national and international levels.

In summary, SADC's role is: to promote TFCAs as regional conservation and development partnerships to contribute to the social and economic integration of the SADC region; to ensure that TFCA initiatives are aligned to SADC instruments and other international protocols targeting poverty alleviation and community empowerment; to generate awareness of TFCAs and solicit technical and financial assistance to support TFCA activities; and, to be a repository of TFCA agreements and arbitrate in the settlement of disputes. Development partners, including conservation-orientated non-governmental organisations, act as donors and facilitating agencies to provide technical and financial assistance. However, ownership and the lead in planning TFCA development processes rests with partner countries. The TFCA process faces numerous challenges posed by the ever increasing human population with its demand on land causing encroachment and over use of resources. Incompatible land use practices can limit prospects for TFCAs as can a failure to reconcile interests and expectations of stakeholders with divergent views such as erecting fences along

international boundaries and different approaches to the management and control of animal diseases. Basically, widespread poverty and poor infrastructure can limit appreciation and social acceptance of a TFCA. Supporting the SADC TFCA process offers the opportunity not only to improve the management of shared natural resources, such as watersheds and livestock habitats with large home ranges, but also to create economic opportunities for rural communities through sustainable development of tourism and save costs through joint law enforcement opportunities, marketing, research and monitoring activities. In conclusion it was stated that establishing TFCAs is a complex and daunting challenge in which TFCA agreements must recognise and safeguard the sovereignty of partner countries; partners must be prepared to compromise but redrawing borders is not an option. The initiative must be owned and led by partner countries with external parties playing a facilitating role. Successful TFCA establishment requires trust, mutual respect, transparency and equality of partners.

In discussion it was stated that a TFCA becomes reality when an agreement is signed by heads of state. Concerns were expressed about social buy-in to the TFCA development process, and the extent to which communities are consulted and what power they have in negotiations. Negotiating a TFCA is a long and complex process but SADC is making progress, unlike other regions in Africa.

4. Dr William Wolmer Institute of Development Studies, UK

Rural development and livestock: trends challenges and opportunities

Subtitled "Achieving compatibility between the Trans-frontier Conservation Area concept and international standards for the management of trans-boundary animal diseases" the presentation started by indicating that there are approximately 70 million livestock raisers in the SADC region. Most rural households and 40 per cent of the poorest households own livestock but it has to be recognised that for many of these it is closely related to crop production and the meat trade is not the prime focus; livestock rearing is about food, draught power, manure, fuel, utensils, transport, social safety nets, cultural resources and a means of saving. Livestock, not only cattle, is important in a different way to men and women, wealthy and poor, at different stages in the demographic cycle. Rising affluence, particularly in Asia, is bringing in a growing global demand for milk, meat and other livestock products heralding the so-called Livestock Revolution. The livestock sector in the developing world is growing at 7 per cent per annum with meat and milk production expected to double by 2050. For the African Union, livestock production is viewed as a "sunrise sector" and a route out of poverty through access to high-value export markets similar to the African horticultural experience. However, Africa provides only 2 per cent of global trade in livestock products and imports US\$ 2.2 billion more livestock products than it exports. Increasing trade from SADC countries has to cope with numerous constraints, not least of which is the rising cost of compliance with product quality and food safety standards. This brings into question the sustainability of the current trade under ACP preferential agreements which are anyway due to cease in the near future. Africa also faces serious competition from low cost, high yield livestock production systems in South America where the veterinary challenges are less daunting because of the absence of a wildlife FMD reservoir and many of the other diseases which African farmers face. The capacity of veterinary services to combat livestock diseases remains a limiting factor. On the positive side, however, one should consider the growth of new markets such as those in Asia, the Middle East and the Russian Federation. There are also increasing regional, urban and local marketing opportunities including opportunities for import substitution such as, for example, the meat trade from Brazil to the Congo DR. The growth of multiple large scale retailers provides opportunities for value-added branding and farm assurance schemes with "green" or "ethical" certification. This is a major niche for SADC to exploit. New ideas for disease control avoiding the need for area-based disease freedom, such as FMD freedom with vaccination, compartmentalisation and commoditybased trade, seem also to be gaining ground. TFCAs could sit comfortably alongside many of the new beef marketing and disease control scenarios being outlined at this workshop even if there will be difficult emotive issues to deal with arising from the consumer's perception of welfare issues with "charismatic" species; the parallel was drawn between the badger and cattle tuberculosis situation in UK and elephants destroying smallholders' crops. The end result can be that land owners come to conceive that they are suffering for other people's benefit and this acts as a deterrent to investment in production.

In the discussion it was mentioned that participatory disease surveillance techniques used in Pakistan had provided very useful data on the incidence and perceived impact of diseases such as FMD on rural livestock raisers. The question was asked if similar studies had been carried out in SADC countries. It appears that there have been few such studies but there are indications from Zimbabwe that FMD does not rank highly except for its impact on ploughing. With respect to the rising cost of compliance with food safety standards, it was pointed out that this does not just apply to ACP/European trade but is increasingly a factor for local populations.

5. Dr David Cumming AHEAD Technical advisor, Zimbabwe

Sustainable livelihoods and system health in southern African TFCAs

The context of the TFCA sustainable livestock development issue relates to the facts that:

- TFCAs target primarily arid or semi-arid regions with uncertain rainfall which demonstrates high spatial and temporal variability influenced now by climate change.
- The soils in high rainfall areas are mostly infertile being leached and low in nutrients and colonised by unpalatable plants.
- The soils in arid areas are richer but plant growth is constrained by lack of moisture resulting in a low biomass.
- Livestock numbers are near a ceiling with more humans than livestock units in the region.
- Meat and milk production are about 5 per cent of the levels in Europe and North America.

The complex interactions are illustrated in Figure 3.

Problems arise from a tendency to make and implement single resource decisions that have multiple resource consequences when dealing with complex adaptive systems in marginal lands with little consideration of the tradeoffs involved.

It is axiomatic that biodiversity is essential for efficient land use yet the livestock biomass is approximately 10 times that of the large wild herbivore biomass. There are disturbing long term trends in per capita food production which has shown more than a 25 per cent decline since 1975, associated with increasing aridity. TFCAs as multispecies/multiuse systems are expected to enhance biodiversity conservation and reinstate large mammal migratory patterns as well as facilitating the movements of tourists across boundaries. In short they are expected to function as "engines" of rural development. However, diseases and disease control measures may pose serious obstacles to achieving both the conservation and rural development objectives.



Figure 3: Complex adaptive systems in marginal lands

The question was posed "Can a more holistic, integrated, "one health" approach help to solve the problems?" Integrating an Animal and Human Health Programme, having Surveillance, Epidemiological Research and Modelling and Control/Containment Strategies, with Participatory Land Use Research and Development providing an Ecosystem Health Programme could result in interactive policy and practice of National and International Land Use Planning and Disease Control. A conceptual framework² was presented for the Greater Limpopo TFCA (GLTFCA) involving some of the questions which need to be answered in each of three research themes:

- 1. Ecosystem: what are the patterns of productivity and ecological goods and services in relation to land use and tenure?
- 2. Disease: What is the distribution and incidence of disease in wild and domestic animals and humans?
- 3. Social System: What are the alternative livelihoods (futures) and the costs and benefits of alternative land uses and land tenure systems?

The answers to these questions could feed into values and choices relating to adaptive management strategies for natural resources and diseases. The presentation went on to explore further these and related conceptual issues relevant to biodiversity and livelihoods.

A request for an overview of the effects of climate change drew the response that, broadly speaking, most of southern Africa is likely to get warmer and drier with less of an impact towards the east (Mozambique and Tanzania). The Zambezi Valley is already warming up more rapidly than was expected resulting in a reduction of fish production in Kariba Lake. A question about how to prioritise land use for food production over biodiversity conservation was answered by stating that the priority was to use high production potential land for agriculture and low potential agricultural land for wildlife and tourism. How best to coordinate groups to collect all the information needed for use as a foundation for management of TFCAs was considered to be an important question, but the answer is not known at present but scenario planning exercises work well.

² The "AHEAD-GLTFCA Programme: Key Questions and Conceptual Framework Revisited" can be found at <u>http://www.wcs-ahead.org/documents/gltfca_revisited.pdf</u>.

SESSION 3: LESSONS LEARNT (REGIONAL AND INTERNATIONAL CASES)

1. Dr Steve Osofsky WCS/AHEAD Coordinator, USA

Cross-sectoral challenges and TFCAs: lessons from the AHEAD programme

The presentation highlighted the fact that the proceedings of the IUCN Vth World Parks Congress, held in Durban, South Africa, in 2003, drew attention to health issues. Dr Osofsky illustrated his presentation with examples of health issues being faced in establishing the GLTFCA, for example those relating to movement of FMD topotypes, tsetse flies and Nagana, bovine tuberculosis (BTB) and rabies. Innovative, integrated approaches ("One Health") can vield benefits in both livestock production and biodiversity conservation with tourism. Examples include the organisation in many countries of community-based animal health workers (CAHW) by non-governmental organisations (NGOs) to provide basic services including vaccination to rural communities with a cost recovery model, and the organisation of a program called Community Markets for Conservation (COMACO) in Zambia which addresses the needs of poor, food insecure families while also facilitating conservation and livelihood diversification. COMACO helps farmers obtain increased commodity prices as they adopt improved land management and farming practices that can sustain higher crop yields, while reducing conflicts over natural resources especially around national parks and forest reserves. Benefits in terms of increased food production are noticeable and tourism has benefited as well as poaching declines. The Namibian authorities created conservancies in which the local people manage their wildlife resource and this also seems to work well, emphasizing the critical importance of good governance and resource tenure. The Global Avian Influenza Network for Surveillance (GAINS), a global collaborative initiative evaluating the role of wild birds in the epidemiology of H5N1 avian influenza, provides an example of how to address the lack of disease surveillance capacity in developing countries.

Discussion stressed the cross-sectoral risks posed by FMD and zoonoses like rabies, for example, through movements of animals following the dismantling of fences.

Dr. Osofsky gave several examples illustrating 'health entry points' for resolving challenges at the wildlife / livestock / human health interface in his talk [Great Limpopo TFCA and transboundary disease issues "As the Fences Come Down," conservancy-based program in Namibia, mountain gorilla conservation and public health issues, Kenya pastoral issues and economics of disease impacts vs. problem predators, COMACO program and food security linkages (incl. poultry health-related issues) in Zambia, the GAINS (Global Avian Influenza Network for Surveillance) program, etc.]. These diverse efforts, championed by a range of institutions of different types (often collaboratively), reinforced the relevance of the health entry point for engaging and assisting communities, and for addressing challenges at the intersection of conservation, agriculture, public health, and the improvement of livelihoods more broadly.

WCS believes that "win-win" solutions to health, land-use, and broader socioeconomic AHEAD (Animal Health challenges are attainable. for the Environment And Development), created to foster a sharing of ideas that will lead to concrete and creative initiatives addressing conservation and development challenges at the livestock/wildlife/human health interface, can help catalyze these solutions. By bringing regional expertise together to compare lessons learned, fostering communications networks that are often lacking even among practitioners in relatively close proximity, and by bringing a global perspective to problems that can benefit from the experiences of other regions, this initiative can pay dividends for protected areas as well as buffer zone communities, for core areas as well as conservancies and corridors – the places where tensions and challenges at the livestock/wildlife interface are greatest. Conflicts between livestock and natural resources must be dealt with if there is to be any hope for peaceful coexistence between the two sectors upon which so many people's livelihoods depend.

There is probably no region on earth where animal health policies and their downstream consequences have had as tangible an effect upon the biotic landscape as in Africa, southern Africa in particular. In many parts of the world, land-use choices are often driven by government (domestic and/or foreign) incentives or subsidies that can favor unsustainable agricultural practices over more ecologically sound natural resource management schemes. Of course, livestock will remain critically important both culturally and economically in much of the region. But provided with a better understanding of disease epidemiology and grasslands ecology, land-use planners can begin to take the true costs associated with both disease control schemes and environmental degradation related to livestock management practices not well-suited to a particular ecosystem into account, and therefore more often favor a return to natural production systems. For example, in semi-arid parts of southern Africa, foot and mouth disease control programs, implemented to support beef production for an export market, may not be as profitable or as environmentally sustainable as a return to multi-use natural systems emphasizing endemic wildlife species (consumptively and nonconsumptively). Mixed systems must also be considered. When it comes to animal health programs and policies in transboundary landscapes, where domestic as well as wild animals have opportunities to cross international borders, making the right decisions becomes even more critical. Clearly, animal health issues - and their implications for human health and livelihoods - must be addressed by any regional agricultural or natural resources management strategies if they are to succeed.

As we look around the world, impacts from interactions between livestock and wildlife (and habitat) are often profound. The issues at this interface represent an unfortunately all-too-often neglected sector of critical importance to the long-term ecological and socio-political security of protected areas and grazing lands worldwide. As socioeconomic progress demands sustained improvements in health for people, their domestic animals, and the environment, we hope we've been successful in drawing attention to the need to move towards a "One Health" perspective.

2. Dr Peter-John Meynell Independent Consultant

Fences and their effects in the SADC Region, some examples

The presentation was based upon experience of three significant environmental impact assessments (EIA) of the effects of fences: strategic environmental assessment (SEA) and EIA of the veterinary cordon fences in Ngamiland, Botswana's EIA of the game fence around the Makgadikgadi Pans National Park, Botswana, and EIA of the buffalo fence around Old Lengwe, Lengwe National Park, Malawi, together with the resulting environmental management planning (EMP). Studies recognised the role of fences as an essential component of disease control strategy in Botswana's Ngamiland but raised concern about impacts on the seasonal movements of wildlife, on Sitatunga populations and on the livelihoods of communities and stressed the difficulty of effectively managing fences in marshy terrain. Various options had been assessed in terms of economic, animal health, ecological and sociological impacts but none had been taken up; fencing decisions are essentially political not technical. The need for fencing around the Makgadikgadi/Nxai Pans National Park arose from a long-standing conflict between wildlife and livestock starting from the mid-1980s after the Boteti River dried. Wildlife damaged crops and lions killed livestock and in response villagers killed lions and other wildlife. In addition there were the issues of ongoing costs of compensation payments, encroachment of livestock into the park and the threat from FMD in wildlife to cattle. The EMP developed provided alternating access to the river for communities and wildlife along the Boteti River, pumped water for the dry season for wildlife, a plan for an emergency water supply for wildlife during drought, emergency implementation funds when necessary and artificial water points in the wet season range in keeping with the unique ecosystem characteristics.

The buffalo fence around the buffaloes of Old Lengwe in Lengwe National park was considered essentially to separate buffaloes from farm land in order to prevent crop damage and disease transmission as well as helping to prevent livestock incursion into the park. The fence was accepted by all stakeholders because its effects were virtually all positive although maintenance was a big issue, as elsewhere.

The conclusions from these case studies were that SEA and EIA are very useful tools to help identify optimal design and routes for fences taking into account key environmental and social issues and costs compared to benefits. EMP can develop mitigation measures within environmental management and monitoring. Putting up fences creates areas where greater management is needed and maintenance is always a major issue. Fences require increased management effort and funding both for disease control and wildlife.

When asked whether the audits showed whether the fences were actually doing what was intended the answer given was that the Ngamiland contagious bovine pleuropneumonia (CBPP) fences had been constructed too late to be effective in the disease emergency but had been retained as a permanent means of preventing CBPP from gaining entry to the country. The Southern Buffalo Fence in Ngamiland is recognised as having protected the delta from incursion by cattle as well as helping to prevent FMD but the Northern Buffalo fence has not proved to be very effective as it is leaky and buffaloes move in and out; in addition there are not many cattle being grazed along much of its length.

3. Dr Neo Mapitse Principal Veterinary Officer, Department of Veterinary Services, Botswana

Fences as a measure for control of animal disease: benefits and impacts

Dr Mapitse presented the background to livestock farming in Ngamiland and Chobe Districts of Botswana and described why a complex set of interconnected fences have been used for the control of CBPP and FMD. The livestock populations are primarily found in Ngamiland and the numbers total some 300,000 cattle and 191,000 small ruminants. In Ngamiland, approximately 6,500 cattle farmers (58 per cent) own 77,000 cattle in herds sized from 1 to 50 whereas in Chobe there are only 16,000 cattle distributed from Pandamatenga to Parakarungu. Therefore livestock rearing is considered to be an important contributor to rural livelihoods in the communal areas of the KAZA TFCA.

The use of fences started in Botswana (then the Bechuanaland Protectorate) in the 1930s and 1940s as bush fences erected to control FMD outbreaks when it was realised that FMD outbreaks and FMD spread followed cattle transportation routes to markets. In 1952 permanent fences and quarantines were approved and construction was started. The first Ngamiland fence was erected in 1955 and the latest in 2008.

Zoning and regionalisation in Botswana was first recognised by the OIE in 1994 as the country's best option for livestock disease management under the communal rearing systems suited to the prevailing market and economy. Botswana was divided into three key areas: vaccinated, surveillance and FMD-free zones. Three types of cordon fences, either single or double, are employed: cattle fences 1.4 m high with or without a 1 m small stock proof/Bonnox fence; buffalo fences 1.5 m high with a cable; and, game-proof electrified fences 2.4 m high with 2.1 m Bonnox fence and two strands on top. The cost of maintenance is very high, especially for game fences.

Experience during the last 30 years in which extensive outbreaks of FMD, CBPP and nagana were experienced has shown that these seriously affect livelihoods and often require governmental action for relief support. Cordon fences were considered to have been critical

in control of the 1997-98 CBPP outbreak which required the slaughter of 320,000 cattle before control was achieved at a total cost of US\$ 97.5 million. The disease and its control had a devastating effect on rural livelihoods in Ngamiland where, before the outbreak, 52 per cent of households ranked cattle production as their most important livelihood source; this fell to 7.2 per cent of households after control. Government assistance became the first or second source of income. In FMD outbreak control farm fences in freehold/leasehold areas and cordon fences in communal areas formed a critical part of the FMD control. In the recent spate of outbreaks control strategies varied depending on the absence or presence of farm and cordon fences; forest reserves and national parks have also been used as barriers to movement. From a Botswana veterinary viewpoint, cordon fences have had a positive impact in prevention of the spread to other districts and re-introduction of CBPP; in preventing the re-introduction of FMD into cattle from buffaloes if the fences are well maintained; and, in TAD control such as cordoning off the Selibe-Phikwe area at risk from trans-boundary spread of FMD. Where cordon and farm fences were used it allowed adjacent areas to continue business as normal or to be used as buffers to allow more distant areas to resume exports earlier than would otherwise have happened. Regaining disease free status was much faster after FMD outbreaks and fewer cattle had to be culled as culling could be implemented rapidly and effectively. The human resource required for picketing to control cattle movements was significantly reduced. Although the economic impact of constructing and maintaining fences is significant their use in disease control, combined with zonation, has brought benefits to rural economies and sustainable livelihoods in terms of facilitating export of meat and edible offals, and hides and skins (valued at US\$ 81.4 million and US\$ 6.3 million respectively in 2006). Together these represent 1.94 per cent of total Botswana exports from a significant proportion of a population that relies on livestock farming for its livelihood. Eighty per cent of Botswana Meat Commission (BMC) throughput is derived from communal farms. Buffalo fences have not only reduced disease transmission between wild animals and cattle but have also safeguarded the Okavango Delta from livestock encroachment, reduced cattle predation, acted as firebreaks and assisted with the regulation of stock movement in grazing areas.

In conclusion it was stated that fences are and will remain a critical component of the strategies used for the prevention and control of TADs in Botswana to safeguard the beef trade derived from the communal livestock rearing system followed by rural communities. It was stated that the benefits of fences have been realised and, where they are not available, or have been removed for other reasons, this has proved to be costly.

The presentation stimulated a lively discussion about whether there could be alternative solutions to maintaining a viable cattle population to supply the export trade and allow the opening up of more land with peaceful co-existence of cattle and wildlife, for example combining vaccination with supportive active surveillance to ensure the relevance of the vaccines used. From the regulatory perspective it must be appreciated that vaccinated cattle can still be infected with FMD virus and that there is tremendous antigenic variation which makes it difficult to make efficacious vaccines. Oil-adjuvanted vaccines, as used in latin America can give longer immunity than conventional vaccines but probably do not offer any major advantages. However, experience shows that it is possible as the Kasane area was kept free from FMD for more than 20 years by vaccination despite daily contact with buffaloes; vaccine can be used very effectively to control FMD. A SADC concerted effort is required to develop technical partnerships to address the vaccine issues that remain.

The buffalo fences were constructed to separate cattle from buffaloes but observations during aerial counting exercises of interaction between cattle and buffaloes suggested that they were not very effective. There were few incidents of FMD during the time that mingling was evident and this prompted a question as to whether or not it is known under what conditions the virus transmits from buffalo to cattle. Perhaps surprisingly, usually there is no

transmission – it is a rare event but the matter is poorly understood; yet clearly there are seasonal risk factors associated with the presence of young calves.

Concerns about the high costs of constructing and maintaining fences stimulated a question as to whether the costs were derived from the livestock sector alone; the reply was that the costs were met directly from government funds.

4. Dr David Parry Ecosurv Environmental Consultants, Botswana

Adverse effects of using fences as a control measure for animal diseases

Notwithstanding the beneficial effects of fencing on TAD control, wildlife conservationists have a different appreciation. The National Biodiversity Strategy and Action Plan (2003-4), prepared by Ecosurv, clearly states the role that fences play in biodiversity loss. Fencing has caused fragmentation of faunal ecosystems which undermines the core *in situ* biodiversity strategy which relies on the maintenance of corridors between protected areas. The sudden decrease in numbers of buffalo, roan, sable and tsessebe immediately after construction of double electrified fences along the western and northern sides of the international border between Botswana and Namibia is the strongest evidence that these veterinary control cordon fences are largely responsible for the population declines. Several other examples were given where fences had had devastating effects on wildlife populations which could not cope with the combined effects of fencing and drought.

In addition to the adverse effects on biodiversity conservation, the economic impacts on the poorest component of society are unacceptably high, conflicting with the objectives of poverty alleviation; alternative land use options are precluded.

The consultative process during fence planning appears not to function well as viable alternatives, agreed through the consultative process, have been ignored and misinterpreted. For example in the case of the Makgadikgadi Pans National Park fence, an EIA indicated that the Department of Water and National Parks is under-resourced and overpressured; as a result small lobby groups disproportionately influence decision making. Preconditions to fencing were not implemented (i.e. the Fence Management, Fire and Water Provision Plans), fencing alternatives were not assessed and water provision came only two years after fence erection. The failure to implement recommendations led to loss of many of the positive benefits.

Lessons learnt from assessment of fencing exercises include:

- Fences are highly effective barriers to ungulate movement, hence they cause high faunal fragmentation and livelihood impacts.
- Extensive planning is required after emergencies and plans should be adhered to.
- If fences are required environmental assessments need to be conducted as early in the planning process as possible to allow for alternatives; environmental assessments must emphasise cross-sector involvement, cross-border ecosystem processes, poverty alleviation and land use planning; EIA requirements must be understood, accepted and implemented; mitigating actions, particularly those which are considered pre-requisites must be implemented.

A vigorous discussion ensued concerning the ways in which fences have interacted with climatic and land use developments to bring about the demise of migratory game populations. There were a series of wildebeest die-offs from the 1950s caused by a combination of factors which probably could not have been foreseen, including the severe drought of 1983 which killed wildlife and cattle throughout southern Africa. A suggestion that the Okavango is not an ecological unit but a low nutrient system elicited the response that it is actually a refuge area and the buffalo fence has cut the ability of ungulates to move out of

it when necessary. If livestock exports from Botswana are not to be an option in future, the fact that on average every Motswana possesses two or three cattle leads to the understanding that the meat would have to be consumed in Botswana. Given this, it was asked what alternative disease control strategies could be put in place. It was agreed that greater use of the compartmentalisation concept was merited and that there was room for much lateral thinking. It has to be understood that the concept under discussion is that of a TFCA not a farming block. There are already a series of ranches around Botswana but these are "postage stamps" according to one participant who stressed that we need to find ways to feed the burgeoning human population.

Working Groups and their outcomes

The facilitator guided the break-up into working groups for a "current reality dialogue" considering institutional issues, challenges and obstacles, and future opportunities. Essentially the idea was for participants to consider what the presentation contents meant to their different disciplines. The groups were focussed around participants working with wildlife, TFCAs, veterinary services and international collaborating partners (ICPs). Each group was directed to iterate three or four points in four issues:

- 1. The current situation
- 2. Lessons learnt
- 3. Current challenges and issues
- 4. New opportunities/options

These groups then reported (see Table 1) in plenary session and the outcome was discussed.

SESSION 4: IDENTIFICATION OF STRATEGIES, PROPOSALS, ACTIVITIES AND RESULTS

Dr Gavin Thomson, Senior Technical Advisor to the SADC FMD Project within the SADC Secretariat opened the session with a presentation on "*International approaches to transboundary animal diseases management and trade in commodities derived from animals*". He stressed the importance of this to developing countries, and especially those in the SADC region; trade is a cornerstone of development enshrined in the Millennium Development Goals. There are 70 million poor livestock keepers in the SADC Region and many live in and around the TFCAs – 1.2 million live in KAZA alone. Ecotourism alone is not enough to sustain people; a diversity of livelihood opportunities needs to be created. The presentation introduced and explained an innovative approach to ensuring the safety of traded commodities i.e. the "commodity-based trade" concept³. Two issues govern international trade in food products:

- 1. Tariffs, which are decreasingly an issue
- 2. SPS standards for human food safety and animal health overseen by the FAO/WHO Codex Alimentarius Commission and the World Organisation for Animal Health (OIE), respectively.

The presentation was accompanied by a film, produced by the UK Department for International Development, which explained the issues through the example of a cattle raiser in Botswana. In brief, the issues explained were:

³ Detailed accounts are available in the following publications:

Thomson, G.R., Leyland, T.J. and Donaldson, A.I. (2008) De-Boned Beef – An Example of a Commodity for which Specific Standards could be Developed to Ensure an Appropriate Level of Protection for International Trade. Transboundary and Emerging Diseases (in press: published online 31 October 2008)

Thomson, G.R., Perry, B.D., Catley, A., Leyland, T.J., Penrith, M-L. and Donaldson, A.I. (2006) Certification for regional and international trade in livestock commodities: the need to balance credibility and enterprise. Veterinary Record *159*, 53 - 57.

- The current paradigm which governs disease control with respect to trade in livestock and livestock products requires that territories or zones within them shall be certifiably free from a number of infectious agents (mainly TADs) and maintained in a state of accredited disease freedom for trade to be acceptable to trading partners.
- This process differs greatly from those applied to all other traded commodities for which the demonstration of quality is focussed on the commodity and not the area of its origin.
- The process of disease freedom accreditation is technically demanding and expensive.
- Under this system, any relapse in disease status, such as by invasion of a disease from a neighbouring country, results in a loss of status and suspension of trade for varying periods depending on the specific agent involved and the provisions of the OIE Animal health Code Chapter for that disease. Regaining disease free status to allow resumption of trade, can be a demanding and expensive process.
- It is feasible to adopt practices which can ensure the freedom from disease agents of products derived from healthy animals even though those animals might come from an area in which a disease agent is present. For example, FMD can be excluded as a risk for disease transmission by premortem inspection, assured post-slaughter maturation of the carcass and deboning with "deglanding" (i.e. removal of lymphoid tissue).
- Similar sets of practices can be elaborated to cover all diseases considered to be of special significance to an importer e.g. rinderpest, bovine spongiform encephalopathy, Rift Valley fever and brucellosis. This might be the only way to deal with disease risks such as Rift Valley fever.
- The principles apply to wildlife products not just those from domesticated livestock thereby enhancing prospects for consumptive use of wildlife.
- Although published data to feed into standard setting exist, the guidelines are not available and need to be developed for practical application.

In essence the issue is to move away from geographic to commodity-based trade standards which enable the potential disease status of products from that of wildlife. This is already done with respect to HPAI where its presence in wild birds does not affect trade from domesticated poultry. A similar approach is being worked on for African and classical swine fevers. There is no reason why this cannot be done for all directly-transmitted infections for which wildlife provide a reservoir, including FMD.

It was necessary again to state categorically that the link between long term carriage of FMD by African buffaloes and FMD in cattle was certain. The role of antelopes has been clarified to a degree recently; new research findings are that FMD in impala is largely subclinical but frank clinical disease does occur as does transmission to cattle (the triangular relationship is illustrated in Figure 4).

Although it has been demonstrated that FMD vaccination can protect cattle in contact, it is clear that the designation of zones "free from disease with vaccination" in SADC, as in South America, is impractical at present because of the problems being experienced with vaccines against the SAT serotypes.

	Wildlife Group	TFCA Group	Veterinary Services Group	ICP Group
The current situation	 Little compatibility Policy and Regulatory Framework Increase in trans-boundary disease incidence 	 Limited interaction between conservation and livestock development sectors Lack of viable alternative livelihood strategies Development of integrated land use plans Top-down approach 	 Conflicting objectives Top down approach with minimal consultation TFCA is new concept containing uncertainties TADs (e.g. FMD) is prevalent 	 Increased incidence of diseases Inter-sectoral dialogue weak Momentum for TFCA strong but understanding (knowledge of and scientific information) weak
Lessons learnt	 Little compatibility Policy and Regulatory Framework Increase in trans-boundary disease incidence 	 Cross-sectoral and holistic approach to TFCA development No immediate tangible benefits to communities Rush TFCA agreements 	 Avoid unilateral decisions TFCAs contribute to diversification (+) and (-) Researched-based decision- making important – gives objective, non-political perspective Motivation (incentives) mechanisms are necessary 	 Need better integrated land use planning Need for improved surveillance and emergency preparedness Cost and benefit sharing mechanisms unexplored
Current challenges and issues	 Political decisions have little significance to technical base Insufficient research data to make management decisions Lack of funding and human resources for implementation Potential donor and local conflicts of interest on objectives and implementation 	 Vested interest of different stakeholders Perception that TFCAs will lead to outbreaks/spread of animal diseases No clear guidelines for development of TFCAs Mindset/attitudes about wildlife and livestock interface 	 Disempowered communities Food security Saturation of eco-tourism Human-human and human- animal conflicts 	 Immediate economic analysis of land use options and disease control Lack of capacity and skills Conflicts of interest and bureaucratic inertia
New opportunities/ options	 Promote rural development – spread resource base Promote collaboration and good governance Set standards for disease management and TFCAs 	 Better understanding of livestock and wildlife diseases Opportunities to tap indigenous knowledge and traditional practices Socio-economic development at grass-roots level 	 Technology sharing Organized consumptive wildlife consumption within TFCAs Harmonized livestock and wildlife disease control 	 Create new paradigm of disease management moving away from area based control Development of regionally appropriate vaccines and Quality assurance TFCAs require formulation of participating management plans

Table 1: Outcome of the "current reality dialogue" working groups



Figure 4: The southern African FMD triangle

Dr Thomson proposed that:

- 1. SADC should make representation to OIE to request that FMD be dealt with in the same way as other diseases i.e. delinking trade issues from wildlife disease status.
- 2. All parties should continue to pressure OIE to develop commodity-specific standards.

During discussion he explained that the SADC FMD Project's intention is to take the proposal to the SADC Livestock Technical Committee and propose that the Committee raises the issue with OIE through the OIE Regional Commission for Africa. Because the wildlife component is so very important, the process would be helped considerably if it could be backed by a wildlife conservation group.

A participant agreed that there was currently a problem with FMD vaccines but suggested that the reason why exporting is a problem is because of the type of vaccine being used in the region i.e. it has to be applied two to three times per year and contains impurities which makes it impossible to differentiate vaccination from field infection. Dr Thomson explained that the problems being encountered were more complex than that being related to the diversity of SAT serotypes of which there exist 14 topotypes of SAT 2 alone in Africa. Current companies do not have vaccine strains to cover the majority of these. For the future what is needed are vaccines appropriate for a particular area.

It was stated that OIE has two objectives: to control trade and disease spread and to limit disease geographically so it can be controlled. As a result it was suggested that stringent rules were put forward as trade barriers and the proposer asked if there was any truth in this statement. Dr Thomson suggested that many might agree with this statement but he could not say if it was the case. OIE has to be persuaded that the intention to control disease and trade issues are not the same thing. The OIE objective is free trade whereas SADC needs animal health for the environment and people. The OIE representative stated that OIE does not disregard the views presented but has to ensure that quality is maintained by due governance and quality veterinary services. Dr Thomson agreed that the debate around CBT has progressed and that it is now largely accepted. To compete in international markets one has to be competitive and some believe that CBT will not make a difference. Others believe that setting conditions will make free competition possible and assist farmers.

The point was made that high value markets have phobias which are strongly entrenched and difficult to overcome. Therefore, those concerned should access international news media such as CNN and the BBC to create awareness of the issues. It was suggested that if the EU electorate understands the issues relating to poverty alleviation that governments could be influenced. In response Dr Thomson pointed out that the CBT concept arose from the EU-funded Pan-African Control of Epizootics programme which had tried to "sell" the concept to African countries but the immediate response was to ask what was the attitude of the OIE and the European Union. It has been easier to sell the concept to OIE than to African countries, who obviously need to be convinced first.

A final question asked "If CBT were to be accepted tomorrow, would Botswana have in place the processes to do it"? There was no clear answer and there were differences of opinion but it was suggested that Botswana is in an outstanding position to take advantage of such an opportunity.

Working Groups and their outcomes

Following the CBT presentation a series of group working sessions were conducted with results of each being reported back in plenary discussion and discussed there before embarking on the next round of group work. The different working group sessins were:

"A shared practical vision"

Groups constituted as before were asked the question "What do you want to see in place by 2015 to ensure an integrated and coordinated approach to rural development that accounts for the objectives of TFCAs and improved animal health?" The visioning guidelines given were:

- Think visually what do you see or envision in the future?
- Describe possible future outcomes, future realities important to achieve.
- Place yourself figuratively in the future and imagine what a strong, effective RBO would look like

 take a photo what would be in it?
- What are the "hopes, dreams, and aspirations" of those committed to building RBOs throughout Southern Africa?
- Positive statements of a hope-filled future.
- A "practical" vision, what could and should be created, not a fantasy or wish list.
- Use nouns to "paint the picture", not verbs to describe how to get there.
- Think about:
 - What does "compatibility" mean in practice?
 - What does it realistically look like to balance the concept of "Africa without fences" with the promotion of agriculture and livestock in and around TFCAs?
 - > What new initiatives have been implemented?
 - > What institutional mechanisms are necessary?
 - > What policies and legal instruments exist?
 - > What internal or external relations or linkages are in existence?

 \triangleright

In essence the question asked was "What is the new reality trying to achieve?"

The outcome was summarised in seven "visions" which are summarised in Table 2. Essentially the visions addressed core issues within three overlapping subjects: disease control and trade; biodiversity and ecosystem conservation; and, transboundary land use planning and livelihood development. "Implementation of acceptable commodity standards" and "Effective disease control and mitigation" were the two visions deemed to have high potential for rapid achievement as enabling activities for the others.

"Strategic actions"

Here the question posed was ""What are the specific, practical, and priority <u>actions</u> that need to be implemented to begin to resolve the apparent impasse between the TFCA concept and international norms for animal disease management to the benefit of both biodiversity conservation and healthy livestock development in order to facilitate sustainable rural development?" The multi-disciplinary group brainstorming sessions were used to identify the common grounds between TFCA and TAD issues.

Guidelines were provided for the process; these were to:

- 1. Individually brainstorm several ideas in response to the focus question.
- 2. Organize into mixed table teams a cross-section of countries, ministries, technical expertise; but all focused on the focus question of how to move toward compatibility.
- 3. Each person share one idea someone volunteer to take notes.
- 4. Each person share another idea.
- 5. Discuss all ideas push for innovative and practical ideas.
- 6. Select 5 6 clear, concise, and significant ideas to share with the group.
- 7. Write ideas on cards use the guidelines presented by the facilitator.

In doing so participants were asked to think about:

- Stakeholder information and education in order to broaden understanding of the issues and opportunities
- Specific efforts to develop the legal and policy framework
- Institutional arrangements that need to be strengthened or developed
- SADC-led initiatives
- Actions and efforts within specific ministries involved in the issue
- Examples of collaboration and cooperation between wildlife/TFCAs and Veterinary practitioners
- Activities initiated by local communities and the private sector
- Harmonisation of national and regional policies, e.g. land use, conservation areas, agriculture, etc.

A large number of strategic options arose from each group with considerable overlap. These were grouped by consensus into a more manageable number. The outcome was a comprehensive list of activities which could be used to guide the process of TFCA development by addressing the major constraints and needs identified earlier (see Table 3). The strategies developed stressed the need to integrate conservation and livestock development understanding to develop integrated management plans for TFCAs and to address certain specific technical issues where advances are needed to underpin implementation. In the process an important underlying principle identified was the need to empower communities through participatory processes. It was widely understood that communities affected by TFCA development had not been adequately consulted nor had there been sufficient dissemination of information to enable sound decisions to be made by all parties.

"Activities and Results"

Using the broad-ranging list the next element of focussing was for the participants, guided by the facilitator, to develop proposals from the strategies proposed. This was a difficult process involving a great deal of compromise as all of the strategic directions developed had merit. However, an outcome of the meeting was required to be identification of tangible and practical actions. The 10 sets of proposals developed were:

Vision 1	Vision 2	Vision 3	Vision 4	Vision 5	Vision 6	Vision 7
Enhanced Stakeholder Participation	Policy Coordination and Sectoral Harmon- ization	Effective Disease Control and Mitigation	Implementation of Acceptable Commodity Standards	Improved and Diverse Rural Livelihoods Opportunities	Regionally Integrated Transboundary Planning and Management	Biodiversity Eco- system Processes Restored/ Enhanced
Participatory land use planning • rural livelihoods • benefit & cost sharing • sustainability	Improved communication and consultation among governmental agencies and NGOs	Improved and effective disease control programmes within TFCAs	Commodity-based Trade Standards in place	Diversity of livelihood opportunities compatible with TFCAs and TADs management	Integrated transboundary plans in place	Diverse productive landscapes where livelihoods are improving, diseases managed and biodiversity conserved
Well informed participating and benefiting communities within TFCAs	Sectoral harmonization and political will	Independent Quality Assurance process for FMD vaccines established	Internationally accepted standards for livestock production and certified commodities within TFCAs	TFCAs with increased wealth to local communities with minimal human- wildlife conflict	Harmonized natural resources and animal diseases management for sustainable livelihoods	Wildlife migrations restored
	Harmonized regional natural resource management and agricultural policy frameworks	New disease management paradigm – CBT and fencing realignment	Integrated regional management of wildlife and livestock	Small holder farmers benefiting from new high value markets and livelihood options		Ecological process restored
		TADs no longer a barrier to TFCAs and rural development	Shared framework for TFCA implementation with country-based plans	TFCAs are key aspects of rural development		Increased economic opportunities
		50% removal of FMD fences in TFCAs				Optimized wildlife biodiversity conservation and livestock production
		Reduced incidence of TADs in TFCAs				
		Development of appropriate capacity and technology for disease control				

 Table 2: Outcome of the "shared practical vision" working groups

<u>Strategy 1</u>: Development of Training Aids and Courses

Purpose: to improve disease surveillance at the wildlife and livestock interface.

Component:

- 1. Develop training CDs and DVDs
- 2. Develop pamphlets and posters
- 3. Develop short course and seminars

Roles and Responsibilities:

Ministries:Identify target participantsSADC Secretariat:Distribution of training materialICPs:Funding participants, venues and materials

Target (Groups/Areas/Beneficiaries:

- State veterinarians
- Veterinary technicians community-based and programme area
- Conservation staff

Champions: GLTP Joint Management Board

Strategy 2: Winning friends and Influencing People

Purpose: To develop a broad base of support at the regional and international levels for CBT and de-boned beef from SADC specifically for adoption by the OIE

Component:

- 1. Lobby SADC livestock technical committee (LTC)
- 2. LTC take message to Africa Commission of OIE
- 3. Lobby influential actors politicians, NGOs, private sector
- 4. Proposal made at OIE General Assembly

Roles and Responsibilities:

Ministries:CVOs achieve common positionSADC Secretariat :To brief SADC Livestock Technical CommitteeICPs:To be identified

Target (Groups/Areas/Beneficiaries: SADC beef producers

Champions: SADC FMD Project and Chief Veterinary Officers (CVOs)

STRATEGIC DIRECTIONS RESULTS									
Strategy 1	Strategy 2	Strategy 3	Strategy 4	Strategy 5	Strategy 6	Strategy 7	Strategy 8	Strategy 9	Strategy 10
Develop Outreach, Education, and Training Programme	Advocate OIE to develop CBT standards	Enable multisectoral/ institutional integrated planning fora	Design and implement investment and funding strategies	Develop and Refine Disease Control Strategies Relevant to the Needs of Both Livestock Production and Wildlife Conservation	Research and Develop Effective TAD Vaccines	Integrate Conservation and Livestock Development policies and practices	Create Regional and National Dedicated TFCA Units/ Structure	Prepare Integrated, Joint Management Plans for TFCAs	Empower Communitiies Through Participatory Processes
Develop strategic educational programmes for stakeholders	SADC lobbies OIE to: Produce standards for CBT Delink FMD- wildlife link	Create national and regional integrated fora which resolve policy conflicts (AHEAD process)	Conduct gap analysis of national veterinary services for public and private investment	Select disease control strategy based upon scenario planning and risk assessment in each TFCA	Develop effective FMD vaccine	Harmonize/integ rate policies for livestock and wildlife management at national and regional levels	SADC establishes dedicated TFCA unit integrating wildlife and FANR – Livestock divisions	Prepare integrated plans for TFCAs	Local communities empowered to conserve and manage natural resources and control diseases
Develop training aids: Animal health officer Conservation	Prepare SADC states to implement CBT standards	Create/ enhance official fora: conservation, animal health, rural development	Empower local entrepreneurs to partner with investors	Conduct SEA/BCA of disease control strategies in TFCAs	SADC establish in- dependent FMD vaccine Quality Assurance	Develop regional policy framework on integrated management plans & fencing	Mandate and resource SADC to coordinate TFCA programs	Develop integrated, joint manage- ment plans for TFCAs	Conduct community consul-tations in TFCAs
Awareness raising and sensitization of all stakeholders including capacity building	Launch study on the feasibility of exporting wildlife commodities	Create periodic fora on TFCAs and TADS at SADC and national level	Develop sustainable funding for TFCA programmes	Strategic realignment of disease control fences as applicable for TFCAs	Accelerate research and develop-ment of appro-priate vaccines	Review policies and legislation	Create TFCA unit in SADC	Examine trade offs between alternative land use and tenure within TFCAs	Train community animal health workers and raise awareness of wildlife and livestock diseases

Develop and roll out stakeholder awareness programmes on TFCAs & TADS	SADC to advocate and adopt CBT	Work with SADC, government, and NGOs to access funding for identified priorities	Improve surveillance & emergency preparedness for disease control	Evaluate current disease legislation and how it can be altered to accommodate management of specific TFCAs	SADC member states to institutionalize appropriate & effective TFCA coordi-nation structures	Develop guidelines for community consultation in TFCAs
Develop SADC- wide communication and awareness programme	Exert pressure on OIE to develop CBT standards		Improve effectiveness of veterinary services to control TADS			
Develop communication and outreach strategy & materials: Radio/TV/ newspaper Livestock management TFCAs/TADS Community participation	Persuade OIE to delink wildlife and livestock relevant to SAT serotypes		Collate and disseminate existing data/ information on TFCAs and TADs			
	Improve local, regional, and international marketing of venison		Create integrated surveillance, monitoring and reporting systems between livestock, wildlife and public health at national and regional level			
	Develop proposal for CBT for SADC OIE delegate members					

Explore wildlife/livestock commodity options			
SADC leads by: Lobbying OIE on CBT standards Adopting CBT as regional standard Setting up CBT certification systems			

<u>Strategy 3:</u> Information Sharing and Cross-sectoral Dialogue Amongst Stakeholders for TFCAs

Purpose: To bring the full spectrum of stakeholders for a given TFCA (TBD) together to facilitate successful TFCA implementation ("AHEAD process," focused on the wildlife / livestock / human interface)

Component:

- 1. Identify relevant stakeholders (government, NGOs, communities, academia)
- 2. First meeting consensus on goals, vision, priorities and key challenges
- 3. Establish a framework for ongoing dialogue and idea exchange

Roles and Responsibilities:

Ministries:Express an interest and see the need; actively participateSADC Secretariat :Participate in dialogueICPs:WCS/AHEAD when asked

Target (Groups/Areas/Beneficiaries: All stakeholders within a given TFCA

Champions: Member states through coordinating country or Member State if no coordinating country is in place

<u>Strategy 4:</u> Develop a Marketing and Investment Plan

Purpose: Develop a mechanism for attracting investors (public and private) in TFCAs

Component:

- 1. Identify and prioritise areas of investment by both private and public investors
- 2. Prepare an investment catalogue
- 3. Publicise the issues (i.e. convene a donor conference)

Roles and Responsibilities:

Ministries:Environment, Tourism and AgricultureSADC Secretariat :FANR Directorate and Resource Mobilization UnitICPs:African Development Bank, bi/multilateral donors

Target (Groups/Areas/Beneficiaries): All TFCAs (N.B. the South African DEAT initiative)

Champions: TFCA Secretariat/Coordinator

<u>Strategy 5:</u> A Case Study of Disease Control Strategies in One TFCA

Purpose: To illustrate issues, processes to consider in developing and refining disease control strategies for wildlife and livestock

Component:

- 1. Review existing disease control practices in the TFCA
- 2. Determine the population at risk and the host population
- 3. Evaluate effectiveness and social and environmental impact

Roles and Responsibilities:

Ministries:	Environment and Agriculture
SADC Secretariat :	Funding (identify and channel) and coordinationt
ICPs:	Academic institutions, NGOs and consultants providing funding and
	technical expertise

Target (Groups/Areas/Beneficiaries): Member countries, TFCA management, local communities

Champions: SADC FMD Project

<u>Strategy 6:</u> Ensuring Availability of Efficaceous and Safe Vaccines

Purpose: To ensure effective disease prevention and control

Component:

- 1. Establish independent FMD vaccine Quality Assurance programme
- 2. Commission R and D on FMD vaccines of enhanced performance
- 3. Commission R and D on improved vaccines of other TADs

Roles and Responsibilities:

Ministries:	DVS/CVO through SADC LTC
SADC Secretariat :	FANR, SADC FMD Project
ICPs:	EC, ADB, USAID

Target (Groups/Areas/Beneficiaries): Livestock owners (especially around TFCAs) vaccine manufacturers

Champions: SADC FMD Project, FANR, Botswana DVS, FAO

<u>Strategy 7:</u> To Undertake Comprehensive review of Conservation and Livestock Policies and Practices in all SADC Member States

Purpose: To develop a common understanding of conservation and livestock policies and practices to integrate them into a single platform

Component:

- 1. Outsource TOR and consultant contracts
- 2. Gather information from SADC Member States
- 3. Produce various reports
- 4. Implement recommendations

Roles and Responsibilities:

Ministries:Provide policies and relevant documentation, sit in reference groupsSADC Secretariat :Coordinate, provide financial support, contract/outsource to
consultantsICPs:Provide financial resources, sit in reference groups

Target (Groups/Areas/Beneficiaries): SADC member states, TFCA institutions, livestock owners

Champions: SADC Heads of States and governments

<u>Strategy 8:</u> Establish TFCA Unit in SADC Secretariat and Member States

Purpose: To ensure effective coordination of TFCA programmes in the SADC region

Component:

- 1. Facilitate the establishment, planning and development of TFCAs
- 2. Mobilize resources

3. Establish TFCAs information management and exchange mechanisms

Roles and Responsibilities:

Ministries:	Ministries responsible for TFCAs – resource mobilization, establishing national TFCA units
SADC Secretariat :	Facilitate the process of establishing SADC TFCA unit, mobilize resources, coordinate ICPs, coordinate and monitor financial support
ICPs:	Mobilise resources, technical support

Target (Groups/Areas/Beneficiaries): All SADC Member States involved in TFCAs, SADC nationals

Champions: Member States (SADC subcommittees for natural resources, environment and sustainable development)

<u>Strategy 9:</u> Establish TFCA Unit in SADC Secretariat and Member States

Purpose: Prepare guidelines for integrated TFCA planning

Component:

- 1. Review existing situation and current issues
- 2. Identify Best Management Practices
- 3. Prepare and validate guidelines

Roles and Responsibilities:

Ministries:	Preparation support, outreach, validation of guidelines,
	implementation of guidelines
SADC Secretariat :	FANR to facilitate
ICPs:	Provide funds, technical assistance (as per previous GTZ project
	developing some guidelines)

Target (Groups/Areas/Beneficiaries): Planners at various institutional levels

Champions: KAZA Secretariat

Strategy10: Training of Community Animal Health Workers

Purpose: To empower local communities to manage and control animal diseases to improve livestock productivity and monitor diseases in wildlife

Component:

- 1. Training in surveillance and monitoring of animal diseases
- 2. Training and materials to collect appropriate specimens and information sharing
- 3. Basic training in treatment and prevention

Roles and Responsibilities:

Ministries:	National Veterinary Department
SADC Secretariat :	FANR Directorate: Natural Resources Unit, Environment and
	Sustainable Development Unit
ICPs:	AHEAD and other NGOs, FAO, Vétérinaires Sans Frontiéres

Target (Groups/Areas/Beneficiaries): Rural communities in TFCAs in very remote areas

Champions: National veterinary services (?)

"Prioritization Exercise"

Again in plenary session, the final task was the difficult one of prioritisation of the actions by selecting ideally six actions which could be put in place within 100 days to make an immediate impact in the short term – in essence a "launch plan" for 100 day deliverables. Participants were requested to consider each action proposed against the need for them to:

- Be significant to achieving compatibility
- Be feasible, having a realistic chance of success
- Create momentum and generate motivation
- Build collaboration

Each participant was requested to review all the proposals and assess them against these criteria and then select two proposals considered to be a priority. The intention was to select six actions but because of the closeness of voting the final result was the selection of ten which are illustrated in Figure 5. The technical area which emerged as the priority under the "100 day deliverables" scenario was development of the CBT mechanism which was conceived to have a great deal to offer to both the wildlife conservation and livestock production fields by facilitating rural livelihood development based on livestock production and consumptive utilisation of wildlife, and trade. The other main area identified for action was the rationalisation of policies and practices relating to wildlife conservation and livestock production. Most participants would agree that the current paradigm of disease control no longer appears to be feasible to implement and is incompatible with wildlife biodiversity conservation and TFCA development.

CONCLUSIONS AND FOLLOW-UP

After printing and disseminating the workshop report, it was agreed that the first action to be undertaken concerned promotion and further development of the CBT concept by firstly briefing the SADC LTC on the issues at its next meeting planned for November 2008. This had already been planned by the SADC FMD Project but could now proceed with broad support from the workshop.

Other follow-up actions needed were identified as:

- the production of one page briefing documents (fliers) in three languages (English, French and Portuguese) targeting a broad audience on the CBT concept and the outcome of the workshop.
- drafting of terms of reference for a comprehensive review of policies and practices (Strategy 7) with later a fleshed out proposal for presentation to potential donors
- briefing the SADC Wildlife and Environment Technical Committees on the workshop outcomes
- issuing a press release on action points arising from the workshop

It was proposed and agreed that a small task force should be set up from members of the workshop group to follow-up on Strategy 8 to track the workshop outcomes and results. Dr Scott McCormick offered to contact the workshop participants and explore if it could be possible for them to cooperate with OKACOM in a comprehensive land use planning exercise.

Although it was strongly stated that such networking as took place during this workshop needed to continue and that a task force was needed to ensure that all the actions identified during the various steps of the workshop were implemented. Another issue raised was that concerning funding for the follow-up tasks. It was not apparent how this should be addressed. One suggestion was that, perhaps, the FAO/OIE Regional Animal Health Centre could take this on.



Figure 5: Launch Plan – 100 day deliverables

CONCLUDING REMARKS

Dr Massarelli expressed his appreciation of the way in which the workshop was conducted with veterinarians and conservations not at any point "at each others throats" as one might have expected. He stated that it was remarkable that such a nexus of wildlife and animal health sectors could be achieved. The entry point for this workshop has been the CBT issue which is a great innovation and the entry point for compatibility. "You can't teach an old dog new tricks" does not apply here. The presenters at the workshop involved in leading the CBT initiative are a great resource. Adopting international, regional and local perspectives was a useful way to arrange the presentations. The excellent qualify of personnel in the region enables them to "hold up their heads" internationally without any feeling of inferiority. Participants were diligent in following the workshop partly because of the excellent facilitation which was provided. The workshop wound up well with a follow-up plan drafted. The challenge now is to take the process forward. The workshop has been a turning point for conservation and animal health in southern Africa.

Three participants made speeches in which they thanked the organisers and participants of the meeting and expressed appreciation of the professionalism of the facilitator for contributing to what had been a dynamic and harmonious working group – a remarkable achievement when considering the issues of livestock and wildlife.

It was pointed out that Botswana veterinarians have for many years applied well their extensive professional skills to safeguarding a nationally-essential trade in livestock products from within a veterinary perspective which has changed little for many years. The FMD control paradiam was developed at a time when wildlife seemed to be a limit-less resource. Development and protection of livestock-production was the prime focus. Similar considerations apply to other SADC countries. Today, as before, in addition to its ethnic and social diversity, it is clear that two important assets are shared by SADC countries: livestock resources and the wildlife heritage, both of which sustain the lives of so many people. The workshop brought together professionals concerned with both resources in a spirit of cooperation; the excellent working atmosphere clearly shows what can be achieved. We can look forward to the outcome being endorsed by the LTC. We can sense now the possibility of putting in place new processes which can be implemented to enhance, not just sustain, livestock- based livelihoods while providing an enabling environment to reverse the trend of degradation of wildlife populations. The livelihoods of people have much to gain from sustained livestock production but many can benefit also from the preservation and exploitation of pristine environments with intact wildlife populations. Combining the two has tremendous potential for development.

The challenge was to devise ways in which both sectors can prosper and we have gone some way towards identifying what is needed for this to happen even if the outcomes from this meeting extend from wishful thinking through "wish lists" to executive direction. The process started here must not be allowed to falter. The outcome will of course depend on all the workshop participants.

Appreciation was expressed of all the participants who had travelled a long way to participate in the meeting; they were thanked and wished "*bon voyage*".

ANNEX 1: WORKSHOP FINAL AGENDA

Achieving compatibility between the Trans-frontier Conservation Area (TFCA) concept and international standards for the management of Trans-boundary Animal Diseases (TADs)

WORKSHOP FACILITATOR: GARY FORBES

Approximate time	Item/Activity	Presenter/ Facilitator		
Day One – Tuesday 11 th November 2008				
1300 to 1430	 Arrival in Kasane and checking-in Lunch (Individuals) Registration 	Organisers		
Session One: Opening and Introductions				
1430 to 1440	Welcome Remarks by Host Country	Ms Rapelang Mojaphoko, Ministry of Environment, Wildlife & Tourism, Botswana		
1440 to 1500	Workshop Opening	SADC Secretariat		
1500 to 1515	Objectives and Outcomes of the Workshop	Dr Andrea Massarelli Project Leader, SADC/EU FMD Project SADC Secretariat		
1515 to 1545	Introductions and Logistics	Participants/Organisers		
1600 to 1800	Boat Cruise for all Participants	Participants		
Day Two – Wednesday 12 th November 2008				
Session Two: Situational Analysis: TFCAs, TADs, fences ad trade issues in the SADC Region				
0730 to 0815	Workshop Overview	Mr Gary Forbes, Facilitator		
0815 to 0845	Overview of Trans-boundary Animal Diseases in the SADC Region	Dr Roy Bengis, President of OIE Working Group-Wildlife Diseases, RSA		
0845 to 0915	Overview of TFCAs in the SADC Region: Status, Challenges and Opportunities	Mr Sedia Modise KAZA TFCA Regional Coordinator, Botswana		
0915 to 0945	Trans-boundary animal diseases: Current international status & management approaches	Prof. Peter Roeder, Consultant, Taurus Animal Health, UK		
0945 to 1015	Rural development and Livestock : Trends, Challenges and Opportunities	Dr William Wolmer, Consultant, Institute of Development Studies, UK		
1015 to 1045	Morning Tea Break			

1045 to 1115	Sustainable livelihoods and system health in Southern Africa's TFCAs	Dr David Cumming, AHEAD Technical Advisor, Zimbabwe		
1115 to 1145	Cross-sectoral challenges and TFCAs: Lessons from the AHEAD (Animal Health for the Environment And Development) Program	Dr Steve Osofsky, Director- Wildlife Health Policy, WCS/AHEAD Coordinator, USA		
Session Three: Lessons Learnt (Regional & International Cases)				
1145 to 1245	Fences and their effects in the SADC Region: some examples	Dr Peter-John Meynell, Environmental & Natural Resources Consultant, Lao		
1245 to 1400	Lunch			
1400 to 1430	Beneficial effects and Impacts of using fences as a control measure for animal diseases	Dr Neo Mapitse Department of Veterinary Services, Ministry of Agriculture, Botswana		
1430 to 1500	Adverse effects of using fences as a control measure for animal diseases	David Parry, Director, Ecosurv Environmental Consultants, Botswana		
1500 to 1515	Afternoon Tea Break			
1515 to 1600	Current Reality Dialogue: Institutional Issues, challenges and obstacles, and future opportunities (Groups according to TFCAs)	Facilitator/Group Work		
1600 to 1730	Groups Reports to Plenary	Group Presenters		
Day Three– Thursday 13 th November 2008				
	Session Four: Identification of Strategies, Proposals, Act	tivities and Results		
Approximate time	Session Four: Identification of Strategies, Proposals, Act Item	tivities and Results Presenter/ Facilitator		
Approximate time 0730 to 0800	Session Four: Identification of Strategies, Proposals, Act Item International approaches to trans-boundary animal diseases management and trade in commodities derived from animals	tivities and Results Presenter/ Facilitator Dr Gavin Thomson Senior Technical Advisor SADC FMD Project, SADC Secretariat		
Approximate time 0730 to 0800 0800 to 1000	Session Four: Identification of Strategies, Proposals, Act Item International approaches to trans-boundary animal diseases management and trade in commodities derived from animals Shared Practical Vision: "What do you want to see in place by 2015 to ensure an integrated and coordinated approach to rural developments that accounts for the objectives of TFCAs and improved animal health" (Same Groups as before)	tivities and Results Presenter/ Facilitator Dr Gavin Thomson Senior Technical Advisor SADC FMD Project, SADC Secretariat Facilitator/Groups		
Approximate time 0730 to 0800 0800 to 1000 1000 to 1030	Session Four: Identification of Strategies, Proposals, Act Item International approaches to trans-boundary animal diseases management and trade in commodities derived from animals Shared Practical Vision: "What do you want to see in place by 2015 to ensure an integrated and coordinated approach to rural developments that accounts for the objectives of TFCAs and improved animal health" (Same Groups as before) Morning Tea Break	tivities and Results Presenter/ Facilitator Dr Gavin Thomson Senior Technical Advisor SADC FMD Project, SADC Secretariat Facilitator/Groups		
Approximate time 0730 to 0800 0800 to 1000 1000 to 1030 1030 to 1230	Session Four: Identification of Strategies, Proposals, Act Item International approaches to trans-boundary animal diseases management and trade in commodities derived from animals Shared Practical Vision: "What do you want to see in place by 2015 to ensure an integrated and coordinated approach to rural developments that accounts for the objectives of TFCAs and improved animal health" (Same Groups as before) Morning Tea Break Strategic Actions: "What are the specific, practical, targeted and doable actions that need to be accomplished in the next three years to achieve our vision" (Group Work - Same Groups) Group brainstorming Identifying the common grounds between TFCAs and TADs Group Reporting to Plenary	tivities and Results Presenter/ Facilitator Dr Gavin Thomson Senior Technical Advisor SADC FMD Project, SADC Secretariat Facilitator/Groups Participants		
Approximate time 0730 to 0800 0800 to 1000 1000 to 1030 1030 to 1230 1230 to 1300	Session Four: Identification of Strategies, Proposals, Act Item International approaches to trans-boundary animal diseases management and trade in commodities derived from animals Shared Practical Vision: "What do you want to see in place by 2015 to ensure an integrated and coordinated approach to rural developments that accounts for the objectives of TFCAs and improved animal health" (Same Groups as before) Morning Tea Break Strategic Actions: "What are the specific, practical, targeted and doable actions that need to be accomplished in the next three years to achieve our vision" (Group Work - Same Groups) - Group brainstorming - Identifying the common grounds between TFCAs and TADs - Group Reporting to Plenary Cluster and prioritize strategies and assign action groups	tivities and Results Presenter/ Facilitator Dr Gavin Thomson Senior Technical Advisor SADC FMD Project, SADC Secretariat Facilitator/Groups Participants Facilitator and Participants		
Approximate time 0730 to 0800 0800 to 1000 1000 to 1030 1030 to 1230 1230 to 1300 1300 to 1400	Session Four: Identification of Strategies, Proposals, Act Item International approaches to trans-boundary animal diseases management and trade in commodities derived from animals Shared Practical Vision: "What do you want to see in place by 2015 to ensure an integrated and coordinated approach to rural developments that accounts for the objectives of TFCAs and improved animal health" (Same Groups as before) Morning Tea Break Strategic Actions: "What are the specific, practical, targeted and doable actions that need to be accomplished in the next three years to achieve our vision" (Group Work - Same Groups) Group brainstorming Group brainstorming Group Reporting to Plenary Cluster and prioritize strategies and assign action groups LUNCH	tivities and Results Presenter/ Facilitator Dr Gavin Thomson Senior Technical Advisor SADC FMD Project, SADC Secretariat Facilitator/Groups Participants Facilitator and Participants		

1500 to 1515	Afternoon Tea Break		
	Session Five: Prioritization Exercise		
1515 to 1645	Prioritization of activitiesYear One FocusCollaborating Partners	Facilitator/Participants	
Day Four: Friday 14 th November 2008			
Approximate time	Item	Presenter/ Facilitator	
0800 to 0930	100 Day Launch PlanIdentifying Tasks and Champions	Facilitator/Participants	
0930 to 1015	Action and Mobilization	ICPs	
	Session Six: Closing		
1015 to 1030	Closing Remarks	SADC Secretariat	
1030	Morning Tea Break		
1100 to 1200	Departure • Checking - Out • Lunch		

ANNEX 3: LIST OF WORKSHOP PARTICIPANTS

MEMBER STATES:

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