

AHEAD-GLTFCA WORKING GROUP – 8TH MEETING

Record of the 8th Meeting held on the 5th – 7th March 2008

Ingwenyama Conference and Sport Resort, White River, South Africa

1. WELCOME AND INTRODUCTIONS

Following welcoming and opening remarks from Nicky Shongwe, delegates introduced themselves in turn.

It was noted that this was the largest Working Group meeting thus far, with over 70 participants including several from overseas (please see Appendix 1 of these minutes).

2. BRIEF INTRODUCTION TO *AHEAD* AND BACKGROUND - Nicky Shongwe

The following power point slides provided a brief introduction to the *AHEAD-GLTFCA* programme for those who had not been to previous meetings.

<p>AHEAD – GLTFCA programme launched in 2003 at WPC</p> <p>Mixed group of people – vets, economists, ecologists, conservationists etc</p> <p>From Sn Africa, E Africa, Europe, USA</p> <p>Several working groups present</p> <p>GLTFCA identified as priority area due to size, population and local history</p>	<p>Linkages and interface issues between wildlife health, livestock health and human health</p> <p>AHEAD = Animal Health for the Environment And Development</p> 
<p>AHEAD – GLTFCA has evolved into:</p>  <p>Human health – livelihoods and wellbeing</p> <p>Animal health – wildlife and livestock health and disease</p> <p>Ecosystem health – goods and services</p>	
<p>Impact of:</p> <ul style="list-style-type: none"> •Land use •Fencing •Domestic animal stocking rates •Encroachment of territory •Human wildlife contact/conflict <p>New concept: “One Health”</p> <p>New paradigm: “healthy people [with healthy livestock] are more likely to support conservation initiatives and be good environmental stewards ” <small>Kock 2007</small></p>	<p>AHEAD is network based</p> <p>250 members in database</p> <p>LoU with 10 organisations incl: WCS, UC Berkeley, DNAC, WWF -SARPO, DVS -Zw</p> <p>7 Working Group meetings since 2003</p> <p>Smaller core group meetings inbetween</p>

Last year: 7th Working Group Meeting in Mozambique

54 attendees

Policy makers, vets, social scientists, park community reps, medical doctors, zoologists etc

From USA, Germany, and 3 GLTP countries

Topics varied from risk of bTB infection in humans, to role of trees in the community, to lessons for permaculture in arid landscapes

Since the last WG meeting:

“Linking Projects ” initiative – arose from suggestions in the meeting

Database of project summaries and abstracts – kept by co-ordinator – actively seek linkages of people working on similar projects/ able to assist in project

Responses from 12 individual/ organisations + several others ?forgotten

A few links/matches have been done – early days..

AHEAD-GLTFCA Scenario planning projects:

“Kruger Scenarios ” – M Murphree

“CASS Community -based scenarios ” – Muyengwa & Chirozva

Steering committee:

Last 3 WG meetings

Call sent out for volunteers

Response mainly vets, mainly South Africans

Time commitment issue

Meeting called last August

Mistakenly labelled “Steering committee ” meeting

Realised that it actually was a “Core Group ” meeting –don’t confuse!

Immediate / short term objectives:

- 1) To facilitate and stimulate active participation and interaction between members of the programme and potential partners (while ensuring creative space)
- 2) To develop a strategy for sustaining the AHEAD - GLTFCA programme, incl financial and communications strategy
- 3) To develop formal links with the Joint Management Board of the GLTFCA and establish further partnerships with participating agencies (e.g. LoUs)
- 4) To lead conceptual development and growth of the research and development programme and network

3. OBJECTIVES AND FORMAT OF THE 8TH WORKING GROUP MEETING

Nicky Shongwe

Objectives of the 8th AHEAD-GLTFCA Working Group Meeting 5 - 7 March, 2008

Ngwenyama Lodge, White River

Overall objective of the AHEAD – GLTFCA programme:

Facilitate development and conservation success thro’ integrated understanding based on innovative, inter -disciplinary applied research, monitoring and surveillance at the interface between wild and domestic animal health, ecosystem goods and services and human livelihoods and wellbeing.

3 specific objectives

- 1) Look for opportunities for innovation
- 2) What? So what? Now what?
- 3) 5 years on in AHEAD, 3 things to consider

Harvard Snowflake Model:

- 6 traits for creativity
1. Personal aesthetic
 2. Problem finding
 3. Mental mobility
 4. Risk taker
 5. Objectivity
 6. Inner motivation

Creativity >>>>innovation

What? So what? Now what?

What – basic facts, what happened , what was said etc ?

- So what?
- USA “so what ...?” ☹

SA “SO WHAT! @ % \$#&%!!”

“So what about it? ” – consequences, relevance?

Now what? – what to do next, what lessons learned for the future?**What?****So what [about it]?****Now what?**

AHEAD-GLTFCA – 5 years on ...

Sustainability?

3 things to consider in the discussions:

Environmental impact/relevance

Economic impact/relevance

Social impact/relevance

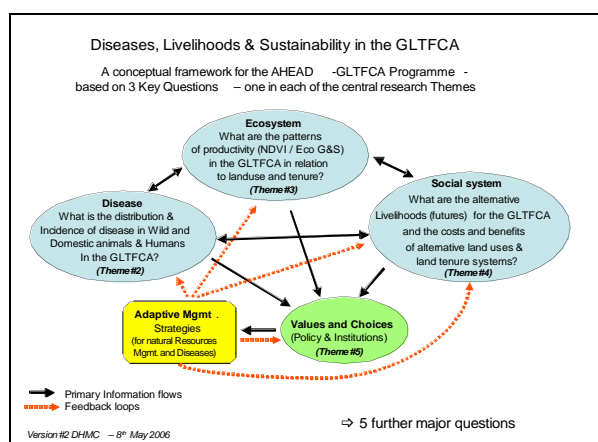
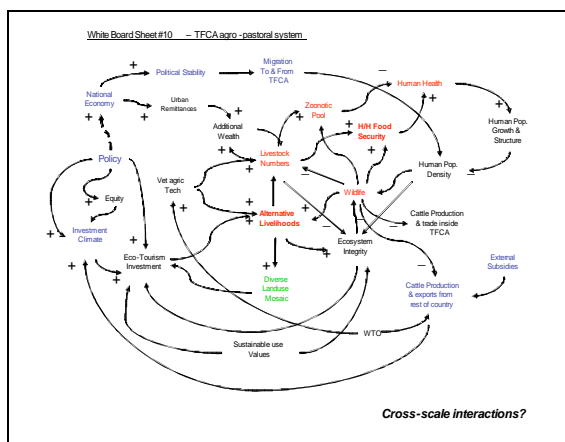
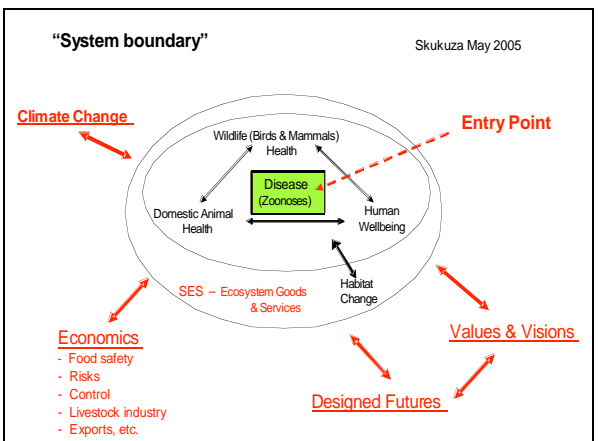
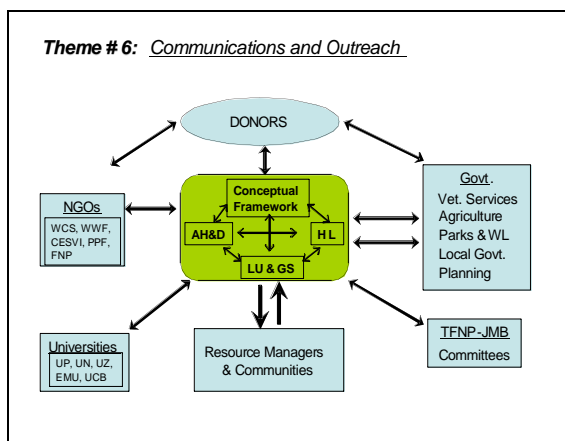
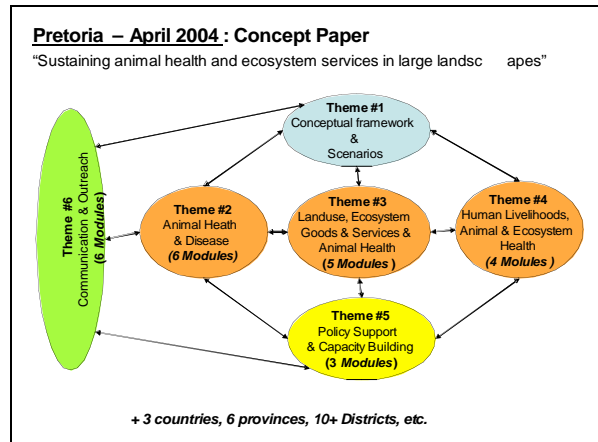
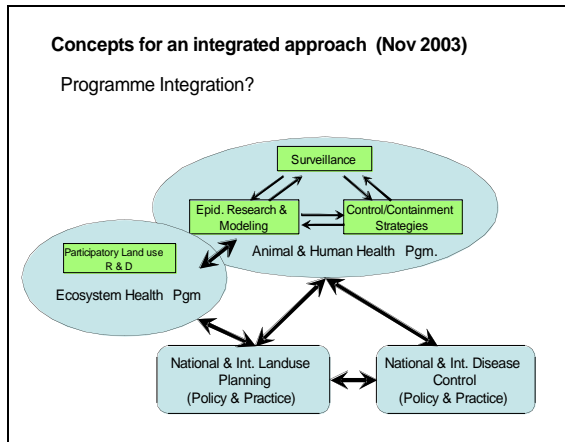
question: “researchers are the people who listen the least because they think they know the solution ...”

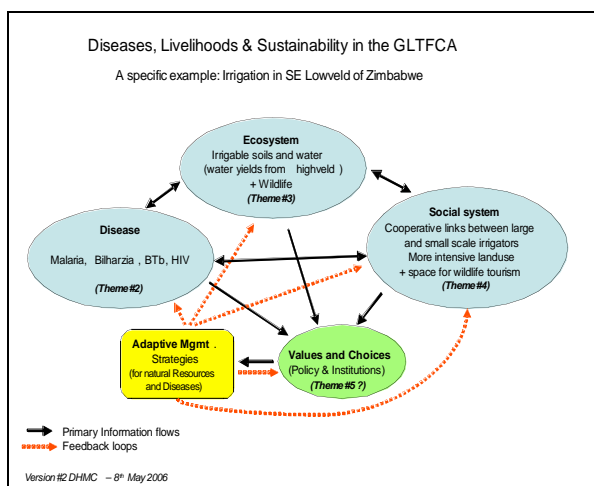
4. THE AHEAD-GLTFCA PROGRAMME: KEY QUESTIONS AND CONCEPTUAL FRAMEWORK REVISITED: OVERVIEW AND SOME QUESTIONS – David

Cumming

The following slides were presented on the revised conceptual framework¹. Printed copies of the full paper (Cumming et al 2007) were available to all participants. The first five slides shown below outlined the evolution of the conceptual framework to its present stage, which is captured in the last four slides. These were presented at the 7th Meeting last March. The final slide raises critical questions which needed to be discussed and commented upon by the working group. The major difference between the earlier conceptual framework and the current version was that of placing the triad of wildlife, domestic animal, and human diseases and zoonoses more firmly within a sustainability and livelihoods framework - a shift that should contribute to greater interdisciplinary cohesion within the programme.

¹ The slide showing the GLTFCA and the Limpopo-Shashe TFCA areas is not included here because of its size.



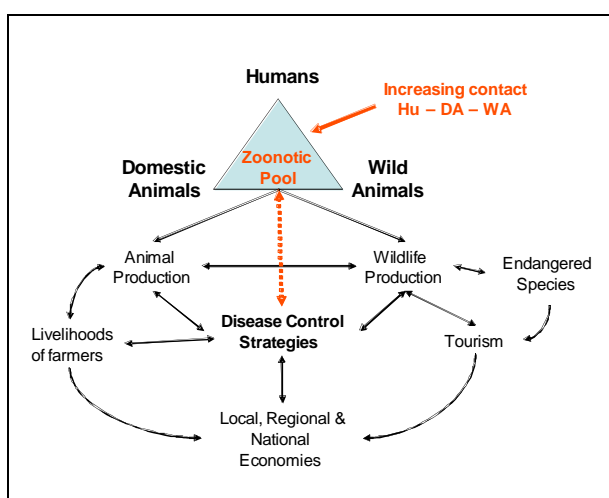


Diseases, Livelihoods & Sustainability in the GLTFCA
A conceptual framework for the AHEAD -GLTFCA Programme -

Five major questions

1. What types and pattern of landuse and tenure will enhance system health, productivity and resilience (sustainability) of the Social System (SES) of the GLTFCA?
2. What is the state and trend of the five capitals (Natural, Human, Social, Financial & Physical) in each landuse/land tenure component of the GLTFCA and how might these change, and system influence health, under differing scenarios?
3. How will the biodiversity, environmental, social and economic trade offs/opportunity costs of alternative patterns of landuse influence adaptability and resilience of the SES?
4. What cross subsidies exist within the system and how vulnerable are they to disturbance and shocks?
5. What is the level of external subsidy to the GLTFCA system and how dependent is the system on, or vulnerable to, external subsidies?

* "Health" refers to wild and domestic animal health and human livelihoods – the disease component of the AHEAD programme.



March 2008 - Issues

1. Is the conceptual framework useful?
2. Has anyone used it?
3. Critical comment?
4. Does it need revisiting – e.g. climate change?
5. How useful / important is it to embed our work on system health within a sustainability framework?

Discussion points:

1. The framework document is valuable and is being used, not only by the group. But, in order to be more widely available a supplementary document that is more accessible to a wider audience should be written and produced.
2. Critical feedback on the conceptual framework document is still needed and would be appreciated by the authors.

5. UPDATE ON THE GLTP PROJECT, FORMATION OF THE GLTFCA AND THE STATUS OF FENCES - Piet Theron

The Great Limpopo Transfrontier Park treaty was signed 2002 and was the first of two phases in the development of the region, namely i) the core national park comprising Kruger, Limpopo and Gonarezhou National Parks and, ii) the development of the broader Great Limpopo Transfrontier Conservation Area which would also includes a range of conservancies, communal lands and Banhine and Zinave National Parks. The major activities have so far involved and included the following:

- a. Wildlife translocation programme
- b. Dropping of sections of LNP/KNP boundary fence
- c. Development of the GLTFCA
- d. Addressing interface issues – AHEAD

- e. Implementation of an integrated tourism development plan for the GLTP (Pafuri Land Use Plan & Gonarezhou Tourism Plan)
- f. Development of a 5-year integrated development and business plan.
- g. Operationalisation of the Giriyondo Border Post
- h. Development of Sengwe Corridor and a new Limpopo Crossing Point
9. Development of Joint Research Policy
10. Setting up a Project Implementation Unit
11. Mechanisms for Sustainable Financing

Some 3,800 animals covering ten species have been translocated from KNP to the LNP over the last six years and the first section of 45 km of fence was dropped in 2002. The aim is to drop most of the fence by 2010. However, cross border crime and illegal crossings remain a concern. A joint research policy has been drafted and is presently being discussed (copies were circulated to participants at the meeting). The document provides a summary of current research being undertaken in the GLTFCA. Key issues that remain to be resolved are procedures for joint research across borders and the associated movement of researchers across borders, and joint research priorities.

The management structure of the GLTP is reflected in the following diagramme,



and the South African Department of Environment and Tourism (DEAT) will host the secretariat, which is to be based in Phalaborwa, for the first three years.

Discussion points:

1. Developments are unfolding without an overall policy and guiding framework. Surely the overall management philosophies, policies and plans for the GLTNP and GLTFCA should be in place before more specific development plans such as those for tourism and the Pafuri area are developed? In response, it was pointed out that the development of tourism plans is a national responsibility and, in the case of Gonarezhou, it is the responsibility of the Zimbabwe Government to develop an overarching park plan before finalising a tourism development plan.
2. Has 'cultural zone' depicted in one of the maps in south eastern Zimbabwe been approved and have the people living there been consulted about it?
3. This is an important presentation that raises several 'so what?' questions. While the developments may be good for conservation, what are the implications of removing fences for public health and for livestock agriculture? Developments have moved faster than the science and ahead of environmental and social impact assessments, largely due to politically enabled 'windows of opportunity.'

4. Some participants considered that the development of tourism was a key driver for the three countries in the establishment of the TFNP, others that conservation was the primary driver.
5. There is an ongoing need for the AHEAD-GLTFCA programme to involve government agencies; particularly those concerned with health and security issues. It is government agencies that advise heads of ministries and ministers and the programme should continue to make a strong effort to secure their engagement.

6. CURRENT CHALLENGES AND PROGRESS IN THE SOUTH EAST LOWVELD, AND THE SEL WILDLIFE ASSOCIATION – Raoul du Toit

A significant step in the development of large-scale, co-management systems in the south-eastern Lowveld of Zimbabwe was the formation of the Lowveld rhino conservancies in 1991.

The immediate catalyst to the formation of these conservancies was a rhino custodianship programme, which provided donor funding incentives to encourage landowners to combine their properties into units large enough to hold viable populations of rhinos, without internal game fences. The willingness of landowners to consider co-management arrangements had been developed through the well-established ICA (Intensive Conservation Area) system. This system had been in place for several decades and had effectively devolved authority for some aspects of resource management to commercial farming communities. The conservancies were a logical extension of this approach.

The challenge for the conservancies has been to achieve all dimensions of sustainability:

- 1.) ecological sustainability, 2.) economic sustainability, 3.) socio-political sustainability.

The ecological sustainability of the Lowveld conservancies has been clearly demonstrated through their track record in wildlife production (as demonstrated by the growth of their black rhino population from 42 in 1991 (4% of the national population) to approximately 400 today (75% of the national population)).

The economic viability of the conservancies as wildlife production systems, as opposed to cattle ranching operations, had to be investigated through an objective professional study as a condition for permission to be granted for the largest conservancy, Save Valley, to introduce foot-and-mouth (FMD) infected buffalo. This restocking of buffalo was approved, and the species replaced cattle in Save Valley after the major drought of 1991/2. In other conservancies, FMD-free buffalo were permitted in fenced enclaves, and FMD-infected buffalo continued to roam in small herds in Communal Lands where they were a significant source of safari hunting revenues.

The socio-political viability of the conservancies was a major challenge from the outset due to the land hunger and poverty of surrounding communities. Although the conservancies had initiated, and were expanding, some neighbour outreach programmes, these were derailed completely by the national political agenda of “fast-track” resettlement during 2000/1. Extensive peripheral areas of the conservancies as well as Gonarezhou National Park were occupied by subsistence farmers and bushmeat harvesters.

Some of the consequences have been: 1.) major poaching losses; 2.) loss of habitats; 3.) loss of spatial connectivity between wildlife areas (in turn creating problems of human-wildlife conflict); 4.) spread of wildlife diseases via cattle that were introduced into conservancies as their perimeter fences were destroyed, and converted into snares; 5.) reduced investment in resource management.

The varied efforts of stakeholders and of NGOs to engage with the relevant officials and politicians have encouraged the gradual emergence of some options for sustainable wildlife-based land reform. By late 2006, it became apparent that a framework was required to facilitate discussions between the stakeholders, not only on these land reform options, but also on TFCA connectivity, maintaining the spatial scale of, and connectivity between, wildlife operations, restocking depleted wildlife populations, enhancing community awareness, etc. Thus the concept of a Lowveld Wildlife Association (LWA) was debated between stakeholders (being mainly representatives of conservancies

and Rural District Councils). In early 2007, it was agreed in principle that the LWA should be established.

The initial priorities of the proposed LWA were identified as: 1.) the development of a constitution; 2.) acquisition of information on the spatial pattern of land-use in the Lowveld and on wildlife distribution; 3.) issues related to FMD control (very important for zonation of wildlife-based land-uses). The FMD issues were discussed at a meeting of these stakeholders in March 2007, during which a broad scenario analysis of land-use options was undertaken.

Over the past year, several significant developments suggest that instead of the LWA being established with a sectoral focus on wildlife issues, it should instead be initiated as a broader Lowveld Partnership Programme that deals with the interfaces between all the major land-use sectors (i.e. commercial wildlife operations, irrigation schemes, and communal land-use systems).

Factors that encourage this broader approach are:

- 1) Policy on wildlife-based land reform is now emphasizing Private-Community Partnerships and/or Public-Private-Community Partnerships, so the interface between these sectors is less politically sensitive as a focus for discussion than it was a year ago;
- 2) Some projects that link these sectors have been initiated or are under consideration, associated with recent private investment in the Lowveld (Bubye River Conservancy/Mwenezi community) and with funding from the European Union (Save Valley/Sengwe community);
- 3) Further development aid appears feasible for multi-sectoral land-use projects, and stakeholder coordination is required to grasp these opportunities;
- 4) There is a growing recognition of the fact that a diversified livelihoods approach is essential to ameliorate rural poverty in the Lowveld – no single sector will uplift the region on its own.

These factors, combined with the difficulty of establishing the classes of membership and voting rights that would pertain to those classes, suggest that the overall Lowveld Partnership Programme should be a loosely structured framework for coordination of stakeholders from all the major land-use sectors. As with the Laikipia Wildlife Forum in Kenya, membership would be fairly open to a variety of stakeholder groups. Under this umbrella could be more tightly structured institutions such as a trust with a board of trustees to manage finances, acting in general conformity with the views expressed by the body of membership of the association, but with internal checks and balances as defined by the deed for that trust and by the agencies that contribute funding.

These ideas now need to be debated further by the Lowveld stakeholders, as does upgrading of the LWA concept. If agreed to by the stakeholders, the broader concept must be sold to development agencies in order to attract the funds necessary for professional staff, to maintain better stakeholder coordination for:

- 1.) Holistic land-use planning/zonation;
- 2.) Durable options for land reform;
- 3.) More effective control measures for FMD and other wildlife/livestock diseases;
- 4.) Locally developed agendas for development aid, instead of externally driven agendas.

Discussion points:

1. The development of coal mining in several parts of the South East Lowveld will add an additional complication in the land use mix and is being driven by foreign entrepreneurs and politicians.
2. The shift from livestock to wildlife-based land uses in the large-scale commercial farming sector after the 1991-1992 drought has now resulted in a renewed focus on FMD while in the communal lands FMD is not seen as a major issue; of greater local concern are tick borne diseases. Government and donor agency preoccupation with FMD is driven by a focus on export markets for

beef. There is a need to reassess this emphasis within a wider framework of land use options, livelihoods and sustainability.

3. Is there a dialogue within Zimbabwe on how aid, when it does return, should be used? A major difficulty is that aid tends to be narrowly sector-focused and involves convoluted planning processes that tend to involve high transaction costs. They also tend to be top down and agreed between donors and central government with little local consultation and input. Stakeholder driven development would be more appropriate, with funds being spread over longer periods and serving to facilitate local self organisation. A good example has been the LIFE programme in Namibia which has been supported over more than a decade and focused on grass roots institutional development.
4. This presentation should be made to the JMB as an example of local consultation in the development of the TFCA, a factor that has been neglected in the other countries.
5. The people in the SEL do not wish to be lumped together as one large 'community' and it is important that they are involved in the development and management of the Gonarezhou National Park which was formerly their land.

7. GLTFCA DISEASE ISSUES

7.1 Progress in addressing animal disease threats (including zoonoses) and priorities in the GLTFCA – a JMB Conservation and Veterinary Sub-Committee update on challenges and progress - Roy Bengis, Chris Foggin, Markus Hofmeyr, Nazare Manguze.

The power point presentation by Markus Hofmeyr contained slides with the following text and/or photographs:

Slide 1: The title slide showed an oblique aerial photograph of a village in the LNP

Slide 2: GLTFCA JMB Veterinary Subcommittee Mandate includes:

- The identification of potential animal health issues and challenges related to expansion of the geographic range of wildlife and their pathogens.
- Identification of potential conservation threats related to pathogens cycling in neighbouring livestock (in all 3 countries)
- Identification of the related human health, domestic animal health and zoonotic issues
- Inclusion of these veterinary issues in the development of a Joint Management Plan for the GLTP
- To advise the Joint Management Board (JMB) on the management of animal health challenges, and prioritise appropriate activity areas to address these issues

Slide 3: *TFCA SUMMARY DOCUMENT FROM THE VETERINARY SUB-COMMITTEE*
PRIORITISATION OF ANIMAL HEALTH CHALLENGES IN THE GLTP

A) INFRASTRUCTURAL AND TECHNICAL NEEDS

- Basic veterinary monitoring and laboratory capabilities lacking in all three countries
- Diagnostic capability – local lab capacity compromised in all three countries
- Centralised data base with GIS capability and data management system – in process of being developed by PPF
- Technical equipment – PPF assisted with funding in Zimbabwe, Mozambique in process of developing capacity
- Training and capacity building – in process of developing training course at various levels
- Development of a Wildlife Veterinary Unit in Mozambique – ongoing (Chokwe workshop)
- Support for Wildlife Veterinary Unit in Zimbabwe - ongoing

Slides 3 & 4:**B) DISEASE MANAGEMENT AND MONITORING RECOMMENDATIONS****C) PRIMARY ANIMAL HEALTH CARE AT THE INTERFACE**

- Vaccination of cattle against FMD and anthrax – suffering from logistical constraints
- Vaccination of dogs against rabies and canine distemper – not in place adequately
- Deworming of dogs (including echinococcus) – not in place adequately
- Regular dipping and inspection of cattle – not in place adequately

Slide 5: INDIGENOUS AFRICAN DISEASES THAT ARE “SILENT” IN THEIR TRADITIONAL HOSTS

- foot & mouth disease in buffalo
- African swine fever in wild porcines
- African horse sickness in zebras
- Theileriosis in buffalo
- malignant catarrhal fever in wildebeest

Slide 6: INDIGENOUS MULTI- SPECIES DISEASES THAT ARE INHERENTLY FATAL

- anthrax
- rabies

Slide 7: FOREIGN ANIMAL DISEASES

- rinderpest
- bovine tuberculosis
- canine distemper
- avian influenza
- classical swine fever

Slides 8-9: Photographs of rural cattle kraal (interface issues) and buffalo (bovine tuberculosis)**Slide 10: BOVINE TUBERCULOSIS AND BRUCELLOSIS**

- Monitoring of BTB and *Brucella* status of cattle in the Sengwe corridor – done and possibly going to be repeated
- Monitoring of BTB and *Brucella* status of cattle in the Limpopo National Park – partially done but requires ongoing monitoring
- Monitoring of BTB and *Brucella* status of cattle on the KNP southern & western boundary - ongoing
- Monitoring the BTB dynamics of the KNP buffalo herds - ongoing
- Buffalo translocations from Limpopo National Park - done

In the above surveys, funds are often lacking for compensation for positive animals that must be slaughtered to confirm the diagnosis and for TB strain fingerprinting

Slides 10 -11: Photograph of lion (tuberculosis) and Buffalo (FMD)**Slide 13: Topotyping of foot & mouth disease viruses in buffalo in Gonarezhou (outstanding) and Limpopo National Park (completed).**

- Collect blood and probang samples from a significant number of buffalo in Gonarezhou and Limpopo National Park
- Outbreaks in cattle seen in Zimbabwe and near the NW corner of Kruger

Slide 14: Corridor Disease: Photographs of ticks on a buffalo, a sick cow and a blood slide
Corridor disease:

- Currently been problematic only sporadically on the south western border of KNP

Slides 15-16: Anthrax: Photographs of a blood slide and a dead kudu

- Last outbreak was a focal area in the NE of KNP in 2006
- Vaccination of cattle in all three countries seem to be current for this disease but will be challenged should another outbreak occur

Slide 17: Rabies

- Major outbreak in Limpopo Province in 2006/7 (humans/domestic animals)
- First wild animal in KNP – side striped jackal in 2007 (Dec. 2006?)
- Malilangwe lost all but 3 wild dogs in 2007
- Ongoing in domestic animals and humans in Zimbabwe

Slide 18: Brucellosis Photograph of a dead buffalo

- Present in KNP buffalo
- Not recorded in isolated Limpopo buffalo herd
- Cattle on western and southern KNP boundary are infected
- Cattle infected in Sengwe, Zimbabwe
- Mozambique?

Slide 19: Trypanosomiasis (Tsetse flies and Nagana) - photograph of a blood slide

- Monitoring of tsetse fly activity and spatio-temporal spread in Gonarezhou National Park.
- Monitor the northern KNP and LNP for tsetse fly incursion.

Slide 20: Avian Influenza (Photograph of water body and birds) **Classical Swine Fever** (photograph of a warthog) **and Others?**

Discussion Points:

1. These issues need to be taken to a higher level where they will influence government policies and spending because there is presently too great a reliance on donor funding. Feedback from the Joint Management Board is not strong.
2. Rabies was the most problematic disease in 2007 with a serious outbreak and several human deaths in Zimbabwe. The first case of jackal rabies in KNP was recorded in 2007 (Dec. 2006?). There is a need for a major vaccination programme in Zimbabwe.
3. Climate change impacts in relation to human diseases and health have not yet been addressed but are likely to have the greatest impact.

7.2 South Africa/Mozambique collaboration on animal disease surveys: Progress

update. Peter Buss, Markus Hofmeyr, Lin-Mari de Klerk, Nazare Manguze, Carlos Lopez Pereira, Roy Bengis, Louis van Schalkwyk, Danny Govender

Discussion points:

1. Reports of a cluster of cattle dying of BTB in the LNP were not confirmed and it was suggested that corridor disease was a more likely cause of death.
2. Some of the animals translocated to LNP were tested (e.g. giraffe and zebra) and none were positive for BTB. Kudu were not moved and no BTB infected buffalo were translocated.
3. Lethal monitoring of BTB in buffalo as part of the disease surveillance programme in Kruger cannot be carried out because the abattoir is no longer functional and funds are not available to fix it. It was noted that carcass recovery and management are an important issue in disease surveillance and that basic aspects such as hot water and disposal facilities could be repaired – disease surveillance did not require the rehabilitation of the canning factory.

4. The focus on FMD in Zimbabwe was not appropriate and there was a need to concentrate on diseases, such as tick borne diseases, that were of greater importance to rural communities. FMD is, however, important to central government and to continuing receipt of development aid from the EU.
5. Land use changes may increase the wildlife/livestock/human interface and result in new emerging zoonoses (e.g. the recent emergence of Nipah virus, encephalitis in humans and pigs that has been traced to fruit bats as the natural host).

7.3 Skills development for animal disease monitoring in the GLTFCA – Emily Lane, Rosa Costa

We make this presentation on behalf of a small group of vets who have been investigating the practicalities of improving disease monitoring in the GLTFCA (including Drs. Penrith, Bila, Manguze, Foggin and Prozesky), and reports progress made largely at 2 recent meetings: the veterinary subcommittee meeting at Malilangwe last year and the recent workshop at the National Zoological Gardens (NZG) in Pretoria attended by a wide range of South African role players from SANParks, National Zoological Gardens, Faculty of Veterinary Parks, National Dept. of Agriculture, the Wildlife College as well as colleagues from Mozambique and Zimbabwe. These discussions highlighted the need for building veterinary diagnostic capacity through a tiered approach to disease monitoring depending on whether or not a mortality case was an individual or part of a cluster of deaths or disease outbreak, and the level of expertise available. Multidisciplinary detailed disease investigations will be an invaluable tool in understanding health and disease, especially at the wildlife-domestic animal-human interface, and should include a wide range of specialists such as epidemiologists, pathologists and specialist diagnostic services such as bacteriology, virology, toxicology, parasitology, etc.

On the ground field staff could be the first level of disease monitoring – a system developed successfully by Dr. Bengis, that may need to be adapted to differing situations in Mozambique and Zimbabwe. In addition to taking a blood sample to rule out anthrax, field staff can be trained to collect and record key epidemiological information about the case. Training of field staff will need to take place in each country, for example, at the South African Wildlife College and is being developed by Drs. Bengis, Nazare and Foggin, based on the comprehensive CD produced and used successfully in South Africa by Dr. Bengis. Details such as the location, language, frequency and format of the data sheet, as well as the resources needed and a system for storing data and possibly blood smears, are being finalized, possibly under the auspices of the Peace Parks Foundation.

The February workshop formulated a plan to develop a short course in wildlife disease, emphasizing techniques for obtaining good quality diagnostic samples and data as well as a thorough understanding of epidemiological basic principles and the interface health and disease issues for humans, domestic animals and wildlife. The course will be applicable to wildlife management areas other than the GLTFCA, as they have similar disease and health interface issues. The course is being developed by the Faculty of Veterinary Science at the University of Pretoria and an outline and budget should be available by the end of April; at which point both the location and financial requirements can be determined. It will fulfill CPD requirements for veterinarians. The planned content will include categories of disease (endemic, exotic/alien, multi-species etc), basic epidemiological concepts including disease patterns and a template for data collection, detailed sample and data collection from live and dead animals (including forensic sampling and carcass disposal), key diseases and conditions relevant to the GLTFCA, principles of disease prevention and outbreak management, health and safety, legal and regulatory aspects, basic aspects of aquatic animal disease and a specialist referral service list. The course should help ensure the collection of quality data and diagnostic materials from the GLTFCA, and sampling kits/materials as well as a database and bank to store collected information is necessary.

To provide diagnostic support for veterinarians and wildlife managers seeking to investigate mortalities, professional development of pathologists is needed. Dr. Costa recently spent 2 weeks on a pilot course arranged between the NZG and Vet Faculty in Pretoria consisting of reviewing basic wild animal pathology (necropsy and stored materials). Plans are in hand to develop a more formalized 2 week learning experience with an emphasis on diseases relevant to the GLTFCA and on developing a network of wildlife pathologists. The NZG also provides brief exposure to our sophisticated biobanking system and genetics lab, as well as our various databases and the growing field of behavioral enrichment (which is relevant to small population management but not directly to the GLTFCA). Financial and human resources are needed to allow 1 or 2 pathologists from Mozambique and Zimbabwe to take part in this training, as well as to distribute basic reference materials on wildlife disease for pathology centres in all 3 countries.

The broader purpose of these various training schemes is to develop a better understanding of the incidence, spatial and temporal patterns of disease in wildlife, domestic animals and humans in the GLTFCA and to use this understanding to shed light on interface disease issues as well as monitor for emerging diseases and conditions caused by environmental, toxic and climatic change factors. Surveys of serological indicators of exposure to various infectious agents are taking place in all 3 countries, however, relatively little pathological information is available– and this information is crucial to understand infectious and non-infectious disease (as opposed merely to exposure to infectious agents). We hope that the above training will increase the amount of opportunistically collected samples for wildlife, and domestic animals, but we need collaborations with human disease specialists too. Sampling materials to collect formalin and frozen tissues, blood smears, ticks and possibly faeces, the processing costs, and a system for storing samples and data need to be provided. Collaboration with other national, regional and international disease control organizations is necessary.

Disease investigation will also depend heavily on specialized diagnostic services including virology, toxicology, bacteriology, parasitology, genetics, molecular diagnostics and serology. Many of these services are available in South African veterinary and human diagnostic laboratories, but capacity needs to be developed in Mozambique and Zimbabwe, as well as practical solutions to the disease control regulations that currently restrict movement of diagnostic samples within the region.

We thank you for the opportunity to present these plans and hope that the skills development initiatives in hand will in time lead to a much better understanding of disease and health issues in the GLTFCA.

Discussion points:

1. The establishment of a curriculum and training courses for veterinary and wildlife field staff working in the TFCA was important and could make a substantial contribution to disease surveillance in the TFCA.
2. There was need to consider diseases in vertebrate taxa other than mammals.

7.4 Surveillance systems – challenges and lessons learned from a human health perspective – Rose Mulumba

No summary available: please see PDF of presentation slides at http://www.wcs-ahead.org/gltfca_march2008/agenda_march2008.html .

Discussion Points:

1. HIV/AIDS needs to be mentioned in relation to the impact it is having on the loss of trained and skilled people – it will have been transmitted to humans via the bush meat trade.
2. What links are there between human and wildlife/livestock disease control and management policies generally and more specifically in relation to the GLTFCA? There is a major need for effective integration.

7.5 GIS – the power, the potential and the requisite preparation – Craig Beech

Evolving GIS

GIS has the potential of drawing together many varied and disparate disciplines and collating their various data and information for effective decision-making. GIS has evolved from the position of those who held “Spatial Data” territorially and made a stamp in the industry by the selling of spatial information.

These days the availability of spatial data and information has evolved and it is within the reach of many. The user friendly nature of GIS software packages, together with viewers like Google Earth, and the dynamic understanding of spatial location linked to attribute information has resulted in a very wide use of GIS, GPS and remote sensing technologies. The question then posed is: is GIS now not more about the creativity within varied disciplines as how to most effectively derive spatial models and processes to create information which can be shared and integrated with other closely linked disciplines?

So how does this relate back to transfrontier conservation? How does it relate back to veterinary research? There is a jigsaw puzzle of biodiversity, of socio-economic issues, of the tourism industry, and of the human / animal interface, all of which hold a spatial component in transfrontier conservation. As these areas are researched and investigated separately, by using GIS and overlay analyses they can be integrated and analysed in an attempt to understand their interdisciplinary relationships.

Historically GIS was something in the hands of a few specialists, and is now a tool that can potentially be in the hands of all.

Discussion points:

1. As part of the development of GIS capability for the GLTFCA there was a need to capture past information on diseases and to explore long term spatial and temporal changes in the incidence of disease in the area. For example, the GLTFCA is subject to wet and dry cycles that can change patterns of tick abundance and disease transmission.
2. The CIRAD project was reviewing historical veterinary records on tick diseases for the SEL of Zimbabwe.
3. There is a need for the group to be pro-active and get into operational mode on disease / spatial information sharing.

7.6 The EPISTIS programme – using remote sensing to manage diseases at the wildlife-livestock interface – Louis van Schalkwyk

No summary available: please see PDF of presentation slides at http://www.wcs-ahead.org/gltfca_march2008/agenda_march2008.html .

7.7 Foot and mouth disease control in and around Limpopo National Park: initiatives aimed at integrated control – Gavin Thomson and Florência Cipriano

No summary available: please see PDF of presentation slides at http://www.wcs-ahead.org/gltfca_march2008/agenda_march2008.html .

Discussion points:

1. Is the main thrust of the proposed fence along the Limpopo to facilitate beef exports?
2. In south eastern Zimbabwe people do not wish to brand their cattle because this would interfere with the illegal export of cattle to Mozambique.

7.8 The CORUS Project – development of an epidemiological network for monitoring the dynamics of foot and mouth disease within the GLTFCA – Ferran Jori

With the creation of the Great Limpopo Transfrontier Conservation Area (GLTFCA), the challenges for surveillance and control of FMD become an even bigger challenge for the region.

To address this issue, the CORUS project aims to facilitate the development of an international network of scientists working in the field of FMD with emphasis on the development of methods, tools and strategies to improve the epidemiological monitoring of FMD in the GLTFCA. To achieve this goal, the project aims to:

1. facilitate the exchange of information between the different role players in the field of epidemiology and control of FMD at a regional level;
2. contribute to the development of different integrative epidemiological tools to clarify the dynamics of FMD in the region and to assist in decision-making regarding its management and control at a regional level;
3. provide training opportunities and scientific support for improved human resource capacity building in the region.

The proposed international network comprises three SADC partners: the University of Pretoria (RSA), University of Zimbabwe, and the Mozambican Institute of Agricultural Research (IIAM). Also, two European Community partners: CIRAD, and the Faculty of Veterinary Science, University of Utrecht in the Netherlands.

A fundamental task of the CORUS project will be the development of epidemiological tools to help in decision making regarding the strategies of control and surveillance of FMD in the region. A generic quantitative risk analysis model will be produced initially in South Africa, and adapted subsequently to different situations and scenarios in the region, with the participation of local and international partners.

Equally, with the information available, the project will provide the basis for the development of mathematical models that will help to predict the dynamics of outbreaks in susceptible populations of wild and domestic animals and the efficiency of possible control strategies. Particular attention will be provided to the likelihood of occurrence of outbreaks from new strains or topotypes or to the potential role of dissemination of FMDV within local populations of domestic and wild animals.

Exchanges of information on FMD dynamics between African countries in the region and the transfer of knowledge between EC and SADC countries is regarded as one of the key points of this project. To achieve this, one regional workshop will be organized every year during the duration of the project, and students from other SADC countries will be trained in South Africa. In addition, at least one expert mission will be organized by EU countries once a year in order to provide the involved students and scientists with external expertise in epidemiological tools. In this context, a post doctoral

fellow and two MSc students (Mozambique and Zimbabwe) will undertake their research in relation with this project.

The duration of the project will be three years, starting at the end of 2007. The total budget allocated is €70.000, among which approximately 70% will be allocated to workshops and capacity building, 15% on operational costs, 5% on capital equipment, and 10% on expert missions.

The project also intends to create a sustainable platform in the region in order to develop future studies on FMD and other animal diseases in the GLTFCA. In that sense, the CORUS project is open to create strengthening synergies with other related projects / groups in that area (PRINT, AHEAD, Peace Parks Foundation, EPISTIS, Competing Claims, etc.)

Discussion point:

1. Budget presented seems much too low in terms of the project objectives outlined.

7.9 CIRAD and South East Lowveld wildlife and domestic animal health projects: an update – Alexandre Caron and Michel de Garine-Wichatitsky

The RP-PCP (Research Platform – Production and Conservation in Partnership) has been launched by four main scientific partners in 2007: Universities of Harare and Bulawayo (UZ and NUST), CNRS (French National Scientific Research Centre) and CIRAD. Its aim is to develop research activities on key issues for the sustainable management of the periphery of protected areas. More than 15 projects, falling within the 4 main thematic fields of the RP-PCP (“Ecology,” “Governance and Natural Resource Management,” “Conservation Agriculture,” and “Animal Health and Environment”) have been funded in 2007-2008 by the French Embassy, providing support to Zimbabwean students (1 PhD, 12 MSc and MPhil, and 4 BSc).

This presentation is mainly dealing with RP-PCP activities on “Animal Health and Environment,” although the presentation by S. Muyengwa during this meeting is related to the activities on “Governance and Natural Resources.” The two projects presented during the last AHEAD meeting in 2007 have been completed (CIRAD Lowveld Livestock Project, a socio-economical and veterinary questionnaire-based study of small-scale farmers around Gonarezhou NP; and CIRAD Lowveld Wildlife Project, a questionnaire-based study of wildlife presence and densities in the Zimbabwean side of the GLTFCA). A new project, funded by the EU and implemented in the lowveld of Zimbabwe by a consortium lead by CIRAD (with WWF-SARPO, Save Valley Conservancy and Malilangwe) will start in 2008, with a component on the management of livestock and wildlife diseases. In addition, some funds will be provided by the regional FMD/CORUS program for some activities on FMD in the Zimbabwean side of the GLTFCA.

This support has allowed the set-up of a comprehensive research programme in the South-East Lowveld of Zimbabwe, aiming at a better understanding of pathogen dynamics and their determinants at the wildlife/livestock interface, with an emphasis on communities of hosts and communities of pathogens. The programme is based on the comparison between 3 selected sites in the periphery of the GNP with a gradient of wildlife/livestock interface: 1) frequent contacts; 2) limited by game-proof fence; 3) limited by low wildlife densities. In each of these sites, a team of Zimbabwean students supported by the veterinary services and CIRAD staff will carry out studies on: 1) prevalence and dynamics of main diseases (ticks and tick-borne diseases; bovine tuberculosis and brucellosis; foot and mouth disease) in cattle and selected wildlife species; 2) local densities and distribution of livestock and wildlife by road and waterhole counts; 3) Habitat use and movements of cattle and buffalo by radio-tracking.

The outcome of these activities is to better understand pathogen prevalence and transmission in a complex wildlife/livestock system. This applied research should ultimately contribute to improving

the livelihood of communities living in the periphery of protected areas, by providing the veterinary services with epidemiological data relevant to improve the management of major livestock diseases.

7.10 Commodity based trade – new opportunities for economic activity in the GLTFCA

– Gavin Thomson

Sustainability of the GLTFCA will depend, among other things, on generating sufficient economic activity to ensure viability. Tourism alone is unlikely to be able to do this and therefore a diversity of income-generating opportunities will probably be essential. Consumptive utilization of wildlife provides one such opportunity but, strangely, seems to have received limited consideration thus far. A possible reason is that products derived from wildlife in the GLTFCA (for example venison) would, under present trading regulations related to animal diseases, be excluded from access to many local, regional and international markets, especially those where the best prices prevail. Standards – in essence embargoes – set for trading products derived from animals where so-called transboundary animal diseases (TADs), foot and mouth disease (FMD) in particular, occur presents the major problem. However, the OIE (World Organisation for Animal Health) has begun to accept that safety standards for trade need not necessarily relate only to the area of production and that products that inherently pose minimal risk (for example, processed products) should have unfettered access to markets, i.e. as long as minimal risk to human and environmental health can be proven. This does not mean that products from diseased animals could be acceptable as food for humans; quite the contrary. All internationally accepted human food safety standards would continue to apply. This shift in emphasis in the international regulation of trade in animal products, i.e. from regional freedom to product safety standards, provides the potential for economically viable consumptive utilization of wildlife within the GLTFCA. This would create opportunities for beneficiation and consequent employment creation. It is therefore proposed that this approach and the possibilities it creates be actively investigated.

Discussion point:

1. The application of this commodity-based trade approach may be more important for enabling export of livestock-derived products, and could facilitate land-use planning that is less driven by large-scale FMD-related cordon fencing.

7.11 General discussion on papers 7.6 – 7.11

1. Stakeholder involvement in the AHEAD-GLTFCA programme.

a) *Cornelia Gerstenberg* (CG) congratulated DEAT and the AHEAD-GLTFCA programme for the progress made and the efforts to coordinate some of the GLTFCA activities, with special reference to the Conceptual Framework Document (CFD) compiled by David Cumming. The CFD represents an excellent and most important starting point for the development of more detailed guidelines for the management and co-ordination of the various GLTFCA activities, while ensuring an appropriate balance of all relevant aspects. However, she was extremely concerned at the lack of government and other stakeholder participation and involvement in the GLTP / GLTFCA initiative.

The current deadlock with regards to the location of the Zimbabwe-RSA-GLTFCA border crossing demonstrates the lack of and urgent need for a framework that facilitates the resolution of conflicts arising from different important priorities e.g. tourism, access versus impact on animal health status and border security prerogatives. CG emphasized the need for all relevant govt. depts. / agencies to be involved at all stages of the GLTFCA development, from planning to execution, in order to ensure that all important and valuable scientifically valid inputs are translated into relevant and effective govt. policies. She thus suggested that the Conceptual Framework document be presented by DEAT to the GLTFCA JMB and, via the Ministerial committee, be forwarded to all relevant govt. agencies of the 3 countries (including, but not limited to, the departments responsible for tourism, agriculture, environmental affairs, health, cross-border security, veterinary services, etc.), with the request for

official representatives of all these depts. to be delegated to participate in the AHEAD programme. She further suggested that the next task for the group should be to develop a coordination framework that balances all priorities with due reference to the legislation and policies of all 3 governments in order to ensure long-term sustainability of the GLTFCA initiative.

b) *Thato Morule* suggested that the organisers of AHEAD-GLTFCA core group need to make recommendations that can be presented to the GLTP JMB so that the 3 governments (Moz, RSA, Zw) could consider them. This might help in answering the concern of governments not taking note of initiatives taken by the AHEAD network.

Also, presenting the recommendations from the meetings to the JMB will help the three collaborating countries to share the information, activities and experience with other SADC members. This will give the opportunity for the region to note the concerns or issues and challenges that need to be addressed in the development of TFCAs, and how to address the control of TADS. Officials from GLTP partner countries should attend the meetings.

In relation to invitations to government and inter-government institutions such as SADC Secretariat, AHEAD should come up with strategies about how invitations to its meetings are issued. One suggestion is that invitations should come from the coordinating country of GLTP as GLTFCA is linked with GLTP.

c) *Steve Osofsky* noted that invitations to the working group meeting had gone out to 250+ people. This list includes members of government agencies— many of whom are at this meeting. The AHEAD-GLTFCA Working Group is an open network, and not administered by the GLTP, although a close collaborative relationship with the JMB, for example, continues.

2. FMD and commodity based trade (CBT)

- a. If CBT for beef became acceptable to the EU then the export of beef from zones presently barred from doing so could have major implications for landuse and could even negatively impact on conservation. This issue was raised at the last meeting.
- b. It will always be essential to protect the dairy industry from FMD.
- c. On the question of harvesting wildlife for meat production it needs to be remembered that a very high proportion of game cropping schemes have failed and that there are marked constraints to harvesting of wild ungulates on an industrial scale. It has worked for small niche markets or where it has been carried out using mobile abattoirs and on a seasonal basis as was done for springbok in Namibia.
- d. There is a need to consider diversified land use options. CBT may allow more diverse options that include livestock + wildlife to be considered by politicians in contrast to hard-edge large-scale zonation that precludes a mosaic of livestock and wildlife enterprises. CBT may thus create opportunities for further niches for wildlife.
- e. Fences of some configuration will still be needed – cattle and wildlife cannot be mixed even under CBT (perhaps depends on the commodity / processing of focus?).
- f. There is a need to find ways to make the bushmeat trade transparent and to develop market standards for bushmeat. Largely unsustainable otherwise.
- g. What is the viability of CBT within regional rather than overseas export markets? The answer is not known but Botswana, for example, would rather export to Europe than regionally because of the higher prices it receives. Namibia exports ten times more meat to South Africa than to Europe but makes ten times more out of its exports to Europe.
- h. When is a commodity safe? This depends on standards and compliance with those standards.
- i. There is an urgent need to create win-win situations.

8. FENCING

8.1 An evaluation of the west-southern fence of Kruger National park and its implications in animal health control at the wildlife-livestock interface: preliminary results – Ferran Jori

Jori F.^{1,6}, Brahmhatt D.², Bengis R.³, Du Plessis B.⁴, Dyasson, E⁵. and Gummow B.⁶

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A questionnaire was implemented along 400 km of fence bordering the KNP (25 fence working camps and 35 fences workers) in order to assess its permeability in 2007. Questions were targeted at the following topics: a) number and seasonality of fence incidents, b) causes of fence damage, c) estimation of number and time of reparation of fence gaps, c) events of possible contact with domestic and wild herbivores in the park and d) observations of wild herbivores outside the KNP. Elephants and people were found by far to be the major causes of fence damage. Electrification of the fence, if it could be maintained, represents a good deterrent for most of large ungulates in the KNP. Of all of the ungulate species, buffalo was the one less commonly seen outside the KNP. This is the first time that the KNP fence has been evaluated through a systematic questionnaire. The data obtained gave a good overview of the main causes of fence damage and provided good information in terms of comparisons of fence leakage between seasons, areas and fence types. The information collected through this questionnaire could be used as baseline data for future fence assessments.

Discussion point:

1. Are there links with veterinary services outside the park? The fence repair work is done for the Department of Agriculture by people working on foot or on bicycles and reporting to their supervisors, the State Veterinarians. Rangers working with in the park also notify the State Veterinarians. Heavy rains also result in breakouts.

8.2 The spatial dynamics of wildlife populations across Kruger National Park fences: the FIRM approach – Ken Ferguson

Fence Interface Research and Monitoring (FIRM): The Spatial Dynamics of wildlife movement across fence boundaries within the context of landscape conduits – defining the process and drivers of egress.

Project Co-ordinators / Leaders: Dr. Rina Grant and Dr. Peter Buss (SANParks)

Project Executant: Ken Ferguson (FIRM)

Project Sponsor Submission: Darwin Initiative/DFID; 2008

Projected Cost: £30,000 Sterling

Project Duration and Starting Date: TBD

The Component 2 project will determine the spatio-temporal processes/gradients that drive and underpin the motivation that makes large mammals cross and move along the fence line. This is a project concerned with the *individual* motivating drivers of buffalo and elephant egress across the fence line, it is not a population study of egress. This approach can be defended because it recognises that it is the potential of only a small sub-section of the elephant population ‘habitual elephant offenders’ that are facilitating the egress for potential buffalo ‘habitual offenders’ (although this hypothesis is less accepted). Ultimately, a knowledge of previous ‘egress pattern shifts’ (EPS) with current status quo, will allow methodologies to be developed that will allow an adaptive management of egress in that FIRM can provide data that will allow us to attempt to manipulate the current EPS.

Either of these premises can only be tested by conducting a behavioural study of landscape movement. The ten subjects (5 buffalo and 5 elephant) will be collared outside of the KNP’s western boundary. By law, they will then have to be relocated inside of the park. When possible, herds/individuals will be driven by helicopter back inside the park before darting. If, during the intervening two years, these collared animals never exit the park again, this would in itself be a significant result, especially for buffalo (we know little about buffalo movement outside of the park). The ‘cascade’ effects instigated by individual elephant behaviour/ breakages cannot be overestimated (threat to park security; millions of Rands in disease control etc.). This study produces an ‘animal-centric’ view on why these animals are motivated to cross this boundary.

We have chosen Kruger National Park’s western boundary as our pilot site. The fence is expensive, ‘leaky’ and a key high disease risk area in that at least two previous FMD outbreaks can be directly related to elephant fence challenges. ‘Clean-up’ costs run into millions of Rands per outbreak thus underlining the economic importance of fence monitoring and surveillance. FIRM will identify the egress patterns, probe the driving processes behind fence challenges and develop mitigation strategies and TFPC. Our ‘universal’ fence monitoring system can assist regional partners by expediting and expanding our methods to the rest of the GLTFCA and beyond.

Motivational drivers of egress across the fence line such as, for example, to gain access to surface water availability or seasonal fruiting of marula trees (R. Bengis pers.comm.) can only be identified by using high tech/high cost GPS telemetry to map the ranging permeability of elephants and buffaloes. In essence, telemetry will ground-truth the permanent transects by mapping landscape conduits taken by target species as they approach, arrive and depart from the fence line. Both pattern and process are key complementary phases in developing GIS layers, least cost path analysis models and ultimately mitigation strategies.

Predicting the timing and spatial pattern of arrival of a sample of elephants and buffalo herds at the fence will be determined in the short-term by the construction of a geo-fence event field (centred on the real fence), which will serve as an ‘early warning system’ for approaching target individuals and seasonal movement pathways. This High Tech/High Cost (virtual) geo-fence will ground-truth a Low tech/Low cost fence line contrast transect monitoring system (Component 1), which can be replicated throughout the park, indefinitely, by SANParks future fence managers and will allow the eventual unravelling of elephant pattern and process of fence egress with consequences for the current fence managers, the National Department of Agriculture and the Directorate of State Veterinary Services by allowing a ‘window of opportunity’ to repair and inspect fence damage and plan for future disease control mitigation strategies, on a seasonal and sectoral basis.

The development of a GPS tracking ‘event field’ geo-fence will be pre-programmed into the GPS/GSM collars with a 32,000 position capacity (African Wildlife Tracking PLC, Pretoria), allowing for at least an hourly position over two years of operation for five elephant and five adult female/male buffalo from five separate herds (darted outside of the park boundary) and as close as possible together. Cellular network coverage is patchy along the study fence, but sufficient for our

needs (M. Henley pers.comm; SANParks may request that a cellular network company loan the project a portable cell mast attached to the vehicle that will allow for real-time download). Once the object enters the event field the frequency of fixes will be increased to give a more fine grain close contact pattern with the fence by means of an SMS message (when within network range) or later download storage. In order to obtain as near as is possible ‘real-time’ fixes within the event field/network coverage and to arrange for the efficient VHF visual location of live objects, we will further use the SMS facility in order to download coordinates whilst in the field (and a parallel download at a base station at Shingwedzi or Skukuza). VHF signals can then be used to track movement pathways *ad libitum* on the ground, if the last position is within approximately a day of being within cellular coverage in gently undulating terrain (H. Rasmussen pers. comm.). Therefore the target animal can be located cost-effectively by using the GPS/GSM coordinates as a starting point (thus obviating the need for expensive aerial searching and giving fine grain habitat selection data on the fence approach). Analysis of the collared individuals approach and departure ‘angles’ and the spatio-temporal correlation of fence egress between the two species can then be measured in relation to habitat gradient type, topography, season, water points and critically as to whether the individuals are ‘repeat offenders’. Dental silicone techniques will be used to accurately determine the age of the animals (Rasmussen et al 2005).

Discussion points:

1. Nothing has been said about the human factor. Unless ways are found to make fences socially desirable and economically relevant to rural communities they will be ineffective.

8.3 Fencing: what do we know, what do we need to know? – Michelle Gadd

- Where are fences?
- When do fences work and not work?
- How do we minimize undesired effects?

ABSTRACT

Africa is crisscrossed by fences, and more fences are coming up every day. However, we know surprisingly little about fences. Even the most basic questions have not been answered in most places: Where are the fences? How well are the fences working? And lastly, how could we improve fences to minimize the negative effects?

In the context of working on wildlife conservation, fences usually serve one of three purposes: fencing people in/wildlife out, fencing wildlife in/people out, or preventing disease spread (where target wildlife species are affected intentionally, and non-target species are affected unintentionally). Although these are very different purposes, the design and the impact are often the same.

Examples were given of recent projects which have made headway on adaptive fencing designs:

- Laikipia Wildlife Forum, in Kenya, to decide upon the optimal alignment of a future elephant-proof fence based upon existing human distribution, aerial census data for mammals (especially elephants), livestock distribution, and rainfall, and
- Ol Pejeta Conservancy, also in Laikipia, Kenya, where elephant breakages were mapped by trackers and fence mending teams. Fences were strengthened where elephant breakages most frequently occurred, and at other points, gaps were opened to release elephants onto wildlife friendly land. Data from collared elephants showed changes in their movement patterns after the fences were altered.

A plea is made to all field practitioners to collect and share basic information on:

- existing fences (GIS mapping of alignment, breakages, breaches, distribution with respect to other resources),

- which species and which individuals within species are adversely affected by fences (using simple carcass counts) or whose movement is impeded (based on observation or spoor, before and after or in adjacent fenced and unfenced areas),
- which species and which individuals within species break through or penetrate fences, when and where (with the hope of eventually understanding why),
- and lastly, to innovate and improve upon fencing design in order to better allow passage of non-target species and to fortify existing design at weak points.

Discussion points:

1. Very little analytical work has been done on fences regarding their effectiveness, environmental impacts and the economic and social trade-offs involved.
2. Comparative studies between countries that use fencing to manage wildlife and related disease issues and to deal with human-wildlife conflict (e.g., Kenya and southern Africa) and those that don't (e.g., Tanzania), may be very illuminating. In West Africa there are large protected areas without fencing but there are buffer zones (hunting zones) surrounding them. Introducing conservation outside parks may help to avoid the need for fencing.
3. Some countries in southern Africa are unlikely to change their attitudes to the use of fencing.
4. Alternatives such as chili pepper repellants are overrated and only work for a short while – there is a continually evolving “arms race” between rural farmers and elephants.
5. In Mozambique, even when the idea of erecting a fence originates from a community, there is still the feeling that the fence is “for conservation” and so it is considered to be the responsibility of the conservationists to construct and maintain the fence. Only when people feel that the fence is *for* them will they take responsibility for it– so there is a need to provide clear benefits from conservation.
6. The fence surrounding the Masoka village in the Zambezi Valley of Zimbabwe for nearly 20 years is one of the few cases of a fence working. In part this is due to (a) the absence of livestock in the area which is infected with tsetse, (b) the community gets good returns from safari hunting, and (c) most importantly the fence was aligned and built by the community who, after an initial period of donor support and training, took over responsibility for maintaining the fence. There was buy-in from the outset.
7. The fence surrounding the Aberdares National Park also works. The neighbouring Kikuyus want to maintain the fence to protect their crops and prevent outsiders from entering the park to grow marijuana.

9. SCENARIOS, HUMAN ZOONOSES, SOCIAL AND DEVELOPMENTAL ISSUES

9.1 Update on the Kruger Scenarios Project, other scenarios work – Michael Murphree

Scenario Planning in AHEAD – GLTFCA – Update 2008

Background

Scenario planning exercises in the GLTFCA - AHEAD programme have been undertaken in different circumstances in South Africa, Mozambique and Zimbabwe. The scenario planning processes undertaken have primarily involved building an understanding of variables or “drivers” that are influencing our current situation or what is referred to as the “default scenario.” Understanding and identifying the drivers and the way they interact currently is critically important if we are to understand how they might relate to each other in the future.

The importance of this for AHEAD goes back to its stated objective:

“Facilitate development and conservation success in the GLTFCA through integrated understanding based on innovative inter-disciplinary applied research, monitoring and

surveillance at the interface between wild and domestic animal health, ecosystem goods and services, and human livelihoods and wellbeing.”

In order for the AHEAD programme to achieve its objective of facilitating development and conservation success in the GLTFCA then we need to understand what is “driving” the current system and how those drivers are likely to respond to each other in the future – a future that they themselves are shaping. We know that the interactions between the drivers are complex and to predict how they will all react in the future is impossible. However, by using scenarios we are able to systematically analyse probable and possible interactions in a range of circumstances that will enable us to better manage the surprises and shocks that will invariably occur in the future. In this way scenario planning helps us by guiding our monitoring and surveillance and in the process strengthens our multi-disciplinary research approach.

The scenario planning approach being applied in the AHEAD programme is process-orientated rather than a single scenario-building exercise. As previously stated the approach thus far has been to build an understanding of existing drivers with the development of some initial alternative scenarios. The intention in the next phase is to re-examine the key drivers, continue with alternative scenario development and test current conventional planning in alternative scenarios.

Scenario Planning Exercises

South Africa – The Kruger Scenarios

The Kruger scenario planning process is the most advanced of the scenario planning exercises undertaken thus far. The process has resulted in extensive driver identification, analysis and development of the default scenario and four initial alternative future scenarios. In addition there has been a further identification of key drivers, indicators for those drivers, categories of drivers for monitoring, and tools for monitoring. The next step in this process will be to review the major drivers, re-assess the alternative scenarios and test current management activities and plans against these.

South Africa – Local Level Scenario Planning, Adaptive Management and Iterative Assessment

This scenario planning exercise is a component of the CASS scenario planning project funded by IDRC. In South Africa the Institute of Natural Resources is the collaborating partner. This project is still in a formative stage with a project site at the village of Bennde Mutale on the north eastern Kruger boundary near the Pafuri gate. Through previous research work considerable baseline data has been collected and scenario work will commence through two community projects that are relevant to natural resource management. Events in the community have required that the initial approach be taken through these two community projects and inadvertently this appears to be showing the importance of “scaling down” before “scaling up.” The project has also shown a significant disconnect between planning processes at different scales and a clear lack of understanding of the GLTFCA at local community level.

Mozambique – Limpopo National Park Veterinary Needs Assessment

Scenario planning techniques were used to develop an understanding of the key drivers in the LNP system. Scenarios were used to help guide where veterinary needs and interventions will be required in the short to medium term, and assisted in the development of a veterinary action plan. The work undertaken in this process will be useful in any further development of scenarios to support management and planning interventions in the LNP. This may well be important as the resettlement of communities living within the LNP becomes a reality in the near future, and the veterinary implications of fence removal with Kruger National Park become increasingly evident.

Zimbabwe – South East Lowveld Wildlife Association

A brief scenario planning workshop focused on the opportunities offered by an expanded wildlife management option for the south east lowveld in Zimbabwe. This exercise concentrated on the identification of key system drivers and an analysis of two contrasting scenarios. The importance of this process was to identify those elements that would promote or constrain the development of this

option. The value of the process was that it was undertaken by a wide range of stakeholders with differing backgrounds and expectations.

Implications and Some Key Cross-cutting Drivers

In the four exercises over the three countries of the GLTFCA, some key cross cutting drivers have emerged. While the major drivers are not unexpected, what is interesting is how they interact with other drivers to create situations that are unique to each country. This uniqueness will determine the future scenarios in each country. While this in itself is not surprising it does have an implication for the GLTFCA, where planning is to some extent attempting to create a consistency over the larger scale landscape. If the complexity and diversity of driver interaction at this larger scale is not understood or taken into consideration in the planning process, then the likelihood of these plans becoming rapidly irrelevant is high. Collaboration and cooperation will therefore only occur where it suits the interest of each country, and management will tend to be reactive rather than proactive. If scenarios can be used to build an understanding of the uniqueness of the common drivers in each system and this can then be used to shape larger scale plans then it may be possible to plan more effectively at this larger scale.

Cross-cutting drivers:

1. Water
 - a. Climate change
 - b. Access to potable water, pollution and sanitation
 - c. Irrigation, agriculture
2. Governance
 - a. Democracy, social and bureaucratic accountability, transparency
 - b. Security, crime, social cohesion
 - c. Ethnicity, migration
 - d. Land and resource tenure
 - e. Infrastructure and technology
3. Human Health
 - a. Access to health facilities
 - b. HIV
 - c. Nutrition
 - d. Poverty
4. Animal Health
 - a. Access to veterinary services and skills
 - b. National, regional and international policy
 - c. Disease
 - d. Control measures
5. Economics
 - a. Local and national economic drivers
 - b. National monetary and investment policy
 - c. Governance
 - d. Globalisation and donor policy
 - e. International markets
6. Natural Capital
 - a. Degradation
 - b. Bio- diversity
 - c. Soil fertility and air quality

9.2 CASS community-based scenarios (IDRC) project update – Shylock Muyengwa and Chaka Chirozva

Local Level Scenario Planning, Iterative Assessment and Adaptive Management Project Update

There have been a number of achievements and challenges in our collaborative project, most of which relate to engaging with the relevant stakeholders. The principle objective of the project is to enhance the ability of local natural resources managers to collectively manage and benefit from their natural resources through the methodology of scenario analysis. To achieve this, the tri-national collaborative teams have worked hard to engage with stakeholders and particularly the local people to facilitate their active participation in project implementation. This summary presents succinctly these experiences and highlights some of the challenges experienced to date.

Two stakeholder workshops were held in Mozambique and Zimbabwe to generate awareness of the project and its links with AHEAD. At both workshops, it was agreed that this project is important as it relates directly to the concerns of the people and as such could provide opportunities for local residents in the GLTFCA to engage with policy and planning officials. In Zimbabwe, follow up activities were done in the South East Lowveld area and to date letters of invitation have been received from wards 13, 14 and 15 in the Sengwe Communal Area. Notwithstanding the socio-economic differentiation in these wards, there was consensus to participate in the scenario planning project. After extensive consultations with their constituencies, councillors from each of these wards submitted letters expressing interest and this principle of self-selection has worked well.

In Sengwe Communal Lands, most local people live off semi-subsistence dry-land agriculture, the traditional cattle economy, a few irrigation schemes, and the collection of veldt products. However, animal diseases in cattle, low precipitation levels and erratic climatic conditions make agriculture and livestock production marginal and highly unreliable. In terms of situational analysis, the livelihoods are very vulnerable and subject to crisis due to recurrent droughts. A large number of people migrate to South Africa, seeking jobs and sending money back home. Difficult environmental conditions and demographic growth compound poverty, the ravaging effects of the HIV pandemic, limited public services and the lack of development and employment opportunities. Local people in Sengwe Community lands play a critical role in the developments within the Sengwe-Tshipise Corridor and remain enthusiastic, committed and instrumental to further development of their areas. Scenario planning presents an opportunity for these to be realised.

In South Africa, serendipity played a part in selection of Bennde Mutale. Earlier work by researchers and exchanges through AHEAD led to the selection of the community despite the stipulation by the project methodology that the site has to self-select. Two groups represent community ‘visions’ and these are “Pafuri Youth Cultural Village Co-Operative” and “Tshumisano-Venda Water Project”. Over the past years, the team has worked on building trust and confidence. The Bennde Mutale community has to date also provided an invitation letter and held meetings with local government officials and the area councillor. There is a possibility that the scenario planning process could be extended to Tshikuyu community. There are several lessons that have been learnt to date in the implementation of the scenario planning project. Most noted is the importance of historical precedents shaping the ‘default scenarios’ that “play out” over a very long period. Communities also work in ‘event cycles’ which project cycles can fail to match. Depending on the context and surrounding social and ecological conditions, projects might have to “think locally first and act locally.”

In Mozambique, the Grupo Traballo Ambiental (GTA) has been implementing the FAO/SADC Indigenous Forest Management Project in Mabalane District, Gaza Province. GTA works with marginal Shangaan communities in marketing and production of charcoal through sustainable forest management practices. To date, they have managed to secure forestry rights for the community to engage in charcoal production from the indigenous forest. Located between the Limpopo National

Park (LNP) and Banhinhe NP, this area presents a number of challenges and opportunities. Although there has been successful institutional development for forest management, the potential of the wildlife corridors that will link the two parks is unknown. This provides an opportunity to use scenario methodologies to explore the possible livelihood alternatives that result from such developments in the Conservation Area. In fact, there is a huge potential for scenario planning to give voice to the people and build their capacity to engage with district and provincial government structures.

There is high vulnerability in this Combomune Rio community with the majority of households depending on subsistence agriculture and limited livestock production. There is very limited access to markets because of poor road network. In terms of *wish lists*, the current needs for Rio are transport, water, schools, and hospital and land titles. The last appears critical given the uncertainty that surrounds the people settled in the LNP and the increasing pressure from entrepreneurs who are taking up land in the area for tourism and related enterprises. In addition, there appears to be potential for small-scale irrigation given the proximity to the Limpopo River. However, lack of funds and institutional capacity leaves this potential unexplored. There is also increasing conflict over grazing of cattle particularly in drought years as an increasing number of people bring their cattle to Rio.

The three cases show clearly that the success of the Scenario Planning project and any such project for that matter requires commitment from the local level. What is striking to note is the overarching need to assess whether the village/local scale have interest, motivation or capacity to drive scenario developments and use them in planning and implementation. For example, the history of Mozambique over the past decades shows centralisation in planning and not devolution. Given the scale of the GLTFCA, it requires a long-term commitment by the implementing NGOs and academics to facilitate the processes so that the resultant plans are considered in the GLTFCA planning framework. There is an opportunity to use the government affiliated Community Councils in these processes. Similarly, there is need to assess what key ‘change’ options exist that this project could use to generate interest, motivation and capacity at local scale. For example:

- Acting as alternative processes, planning systems, promoting community representation in centralised TFCA initiatives (counter-planning);
- Being part of land rights-demarcation, titling or natural resources management rights process for Combomune Rio.

The scenario planning methodology is a useful tool for planning in complex ecological systems and will be useful at the scale of the GLTFCA and local community.

Discussion Points:

1. Major challenges to the project were highlighted and it is clear that the process will take longer than anticipated. The question arises as to whether IDRC will continue to provide or extend support? There is a local awareness of the difficulties and communities welcome the project. IDRC are presently rolling over the funds which are administered from Nairobi.

9.3 Governance, accountability, and CBNRM in southern Africa – lessons learned and ways forward – Patricia Mupeta

The past two decades have seen a paradigm shift in the conservation of the world’s natural resources. The development of Community Based Natural Resource Management (CBNRM) has been one of the main responses to this in Sub Saharan Africa. CBNRM has enabled national governments in developing countries to turn to local-level common property institutions as new policy thrust to decentralize the governance of the environment. After two decades of CBNRM implementation in southern Africa, it has scored some success and some failures. One of the recurring challenges CBNRM implementation faces in southern Africa is that of governance at the local community level. Issues of lack of downward accountability of community leaders, low levels of participation in decision making and elite capture of financial and social benefits have recurred in almost all CBNRM

programs in southern Africa. In an effort to begin understanding how governance influences CBNRM performance, this study examined horizontal accountability in CBNRM. This study was conducted in Botswana and Namibia. The study shows that in Botswana, horizontal accountability is relatively weak, and both financial and natural resource information is not filtering from the elected leaders to the constituents. In Namibia, however, the results show that horizontal accountability is evident in the flow of financial information from the leaders to the constituents however information on natural resources is not getting to the constituents. The study concludes that examination of horizontal accountability as a form of governance, and how it affects the management of common property resources, is important and that in CBNRM, it should be further investigated and compared across communities.

Discussion Points:

1. How does this “democratization” impinge upon/undermine/improve/reduce traditional decision making systems for NRM, e.g. the gender issue in Namibia? CBNRM people said that Namibian women must join in decision making at group meetings, which is against traditional practice. So is someone looking at social and NRM impacts of inserting “democracy” into traditional systems, instead of just assuming it has to be done to improve NRM? Few women speak at meetings but they do have a voice in decision making behind the scenes.
2. Are CBNRM projects for empowering communities seen as subversive? In some cases, yes. In Zimbabwe it took 9 years to get CAMPFIRE going – it was initially regarded as a subversive programme despite the government rhetoric that it was “giving power to the people.” An Under Secretary in the Ministry of Natural Resources finally convened an inter-departmental meeting which flushed out the objections from the Ministry into the open and allowed the programme to start.

9.4 Competing claims on natural resources – overcoming mismatches in resource use through a multi-scale perspective – Jens Andersson

Competing Claims is an inter-university research programme studying situations of competition over natural resource access and use, aiming to guide stakeholders in dealing with (potentially conflicting) multiple uses of natural resources. It seeks to develop more equitable management options that reduce rural poverty, reduce conflict, and achieve more sustainable use of natural resources.

See: <http://www.competingclaims.nl>

Project summaries (for Researchers at 8th AHEAD-GLTFCA meeting)

9.4.1 South-eastern lowveld, Zimbabwe

a) Vulnerability and resilience of competing land-based livelihoods

Southeastern Zimbabwe is a drought prone region more suitable for both livestock and wildlife than for cropping. Local communities depend on livestock as their main source of livelihood, yet economists believe tourism with wildlife makes a lot more sense. This situation presents a conflict of interest between several stakeholders on best land-use options and natural resource conservation strategies. Already there are complex relationships between various sub-systems in the area: communal grazing / park grazing / smallholder grazing; water for cattle / for people / for wildlife; sorghum cropping / maize cropping; migration / cattle rustling / hunting or poaching, etc. Our work analyzes these linked systems and multi-scale patterns of resource use around which humans have organized themselves.

The research follows Walker & Salt (2006), who indicated that what is usually overlooked in the sustainability paradigm is that the key to sustainability lies in enhancing the resilience of communities, not in optimizing isolated parts of the system. Local communities are better able to withstand various cycles of change if they know more about the ecological drivers of their region,

embrace rather than try to control the processes of natural change, and are empowered to make their own decisions about appropriate local developments. “Long term prosperity needs ‘resilience’ not just efficiency” (Ludwig et al. 1997). Understanding complex human–environment systems thus involves understanding how cooperation and networks of interaction emerge from individual behaviour and feed back to influence such behaviour (Levin 2003, Easterling & Polsky 2003).

PhD researcher: Chrispen Murungweni (MSc)

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b) Knowledge encounters, power and participation in governance of natural resources: Experiences from communities in the Great Limpopo Transfrontier Conservation Area

In Southern Africa, transfrontier parks (newly defined conservation areas) have brought many new challenges to local populations living in or adjacent to these parks / newly-defined conservation areas. The creation of biophysical spheres over political boundaries opened up existing sub-national administrative boundaries, thus creating new landscapes and management entities. These transnational parks and conservation areas stress the importance of local communities’ participation and the socio-economic benefits of conservation for local communities. However, the planning processes and resource use negotiations often result from concomitant higher levels. Therefore, new participatory (scenario) planning and research initiatives are being developed with the aim to empower local communities in the context of these newly defined biophysical and administrative entities to strengthen their adaptive management capacity. This study seeks to analyse (compare, and evaluate) transfrontier initiatives, focusing on the politics of knowledge within these newly emerging local planning processes. Using the experiences of Zimbabwean (and possibly Mozambican/South African) communities affected by the GLTFCA as an empirical case, the research builds primarily on anthropological and ethnographic research methodologies, such as situational, network and discourse analysis, to understand knowledge contestation in community-based planning trajectories that occur within the context of newly defined resource and landscape transfrontier zones.

PhD researcher: Chaka Chirozva (MSc) – Project in collaboration with CASS, University of Zimbabwe

c) Redressing asymmetry in resource allocation through co-operation among livestock & wildlife systems

One important cause of failure in natural resource management is mismatch of scales (Folke et al. 1998). These occur when the scales of ecological dynamics and the scale of social organization are aligned in a way that negatively affects an ecosystem (Cumming et al. 2006). The consequences of scale mismatches for the environment may be severe: inappropriate management often results in a loss of natural landscape heterogeneity and further impacts on broad-scale ecological processes such as the movement of species through landscapes (Cumming et al. 2006). In general, degraded ecological systems become less able to provide the goods and services that humans rely on and this subsequently leads to degraded social systems which result in a net decrease in human well-being. Therefore, this project seeks to add to an understanding of the topic of scale mismatches by studying spatio-temporal dynamics of resources shared between wildlife and livestock. The hypothesis to be tested is: harmonization of the socio-economic organization and ecological scales at the appropriate level, would lead to optimal allocation of resources between wildlife and livestock. This implies

increased production and higher economic welfare for the majority of the stakeholders in the long term. This is based on the subsidiarity principle (Berkes 2006), which stipulates that ‘decisions should be taken as closely as possible to the citizen’ and that action should be taken at the level where it is most effective (Karlsson 2007).

PhD researcher: Xavier Poshiwa (MSc)

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9.4.2 Limpopo province, South Africa

a) **Balancing eco-tourism and livestock production: Implications for livelihoods and the environment in Limpopo province**

Conservation areas, such as the recently established Great Limpopo Transfrontier Conservation Area (GLTFCA), present an opportunity for emerging land uses to complement agriculture as means of livelihoods, particularly where agricultural potential has been limited and incomes and employment levels are low. Engagement in eco-tourism constitutes one such opportunity for rural communities in South Africa, but exacerbates competing claims on land. The limited availability and productive capacity of land as well as other socio-economic constraints necessitates balancing eco-tourism and existing livestock production as land use alternatives for improved rural livelihoods. To achieve this, information on possible economic impact of the GLTFCA and quantitative information on the potential of eco-tourism and livestock production as land use alternatives is required.

This study aims, in consultation with local stakeholders, to contribute towards this gap in knowledge by identifying socio-economic consequences of the emergence of alternative land use practices and analyzing possible options and trade offs for improved household welfare in the conservation area. The study develops a framework at household level considering impacts at higher levels for evaluating eco-tourism and livestock as land use options. Furthermore, it applies a spatially explicit bio-economic model based on this framework to evaluate alternative scenarios developed in consultation with stakeholders considering socio-economic and bio-physical constraints. Economic benefits of livestock production to the household are studied through valuation of monetary and non-monetary livestock products, and the potential economic benefit of eco-tourism is investigated through choice modeling techniques, and then integrated to determine possibilities for improved livelihoods.

PhD researcher: Petronella Chaminuka (MSc)

9.4.3 Limpopo National Park area, Mozambique

a) **Agent-based simulations of land use negotiations with spatial land use models: Dealing with uncertainty in the Great Limpopo Transfrontier Conservation Area (GLTFCA)**

This research project focuses on the multiple-use (or buffer zone) of the Limpopo National Park (LNP), along the Limpopo River. Using qualitative, quantitative and spatial tools, it aims to describe,

analyze and model the livelihood system of people affected by the restriction policies of the park and, simultaneously, seeking to contribute to alternative livelihood pursuits for these people.

The research seeks to develop a spatially-elaborate characterization of livelihoods in the Limpopo National Park area. This livelihood typology will then be used to analyze and discuss the impact of the different restrictions on natural resource use with different stakeholders, and form the basis for the development of alternative resource use scenarios. A central concern of this research project is therefore: Can people's natural resource-based livelihood pursuits and conservationist objectives be (made) compatible?

PhD researcher: Nicia Giva (MSc)

b) The role of social and technical innovations in resolving competing claims over natural resources

As a result of the implementation of the Limpopo National Park in 2001, population resettlement is planned for 7,000 of the 27,000 people currently living inside the park boundaries. The resettlement initiative is being promoted as a development project according to World Bank policy standards, but resettlement is widely known to be associated with a series of negative livelihood impacts. In order to understand these risks imposed by resettlement from the LNP, this interdisciplinary research aims to analyze the process of negotiation and decision-making that determines the conditions under which resettlement will occur, and quantify the differences in availability of natural and non-natural resources between the pre- and post-resettlement sites. This research also engages in designing alternatives for mitigating risks placed on food security by this change in access to resources, specifically the potential for improved germplasm to increase maize production under drought conditions.

PhD researcher: Jessica Milgroom (MSc)

Discussion points (i.e. on Competing Claims project):

1. There was a brief but unresolved discussion on the distinction between “negotiated knowledge” and “scientific knowledge” and the relative roles of science and other sources of knowledge in the competing claims project.

9.5 Courting the rain: what role for resettlement as a development initiative – Jessica Milgroom

Resettlement of villages from the Limpopo National Park is being presented as a development initiative intended to provide livelihood benefits to relocated residents. Although it is well known that resettlement is often associated with increased impoverishment, social marginalization and other detrimental consequences, careful planning and commitment to livelihood rehabilitation can potentially prevent this from occurring. Agriculture is a key activity for residents in and around the park, despite the challenging agro-climatic and socio-economic context, such as erratic rainfall and a lack of services. In response to these conditions, residents have developed a series of risk mitigation and adaptive strategies that enable them to continue to practice agriculture, including solidarity beyond social networks and varied agricultural management practices. However, due to land scarcity in post-resettlement conditions, it is likely that these strategies will no longer provide the same advantages, if they can be employed at all. In order for resettlement to offer opportunities for development, creative and effective alternatives must be found to address these constraints. Preliminary research results will be presented of an on-going study of seed systems with a focus on maize, and through the identification of strengths in the existing system, possible points of intervention for post-resettlement livelihood rehabilitation efforts will be explored.

Discussion points:

1. What will or can the AHEAD-GLTFCA programme deal with? For example, there is the issue of irrigated cane and a biofuel development project below Massingir dam that is taking up land and water within the GLTFCA; it affects KNP water resources and local livelihoods and people are moving into the area. As a land-use issue within the TFCA there is the clear need for good information on the biodiversity and socio-economic / landuse trade offs that are involved in such developments. In this context the AHEAD-GLTFCA programme should investigate the problem in order to provide sound information to decision makers involved. It is more an issue of funding to undertake the necessary research than one of “mandate.”
2. Does the JMB tackle issues such as this? The sugar estate issue is not within the TFPA, but is within the TFCA, so it should be discussed within JMB but the JMB hasn't met much recently. There is also the question of which member country can legitimately raise the issue.

9.6 Biomimicry – lessons in sustainability from nature – Claire Janisch

Claire talked about her experience learning about biomimicry in the Amazon Rainforest in Peru. Learning from Janine Benyus (recently selected as one of Time magazine's “Heroes for our Planet”), Dayna Baumeister, the local guides at the research centre and nature.

Biomimicry is about “How We Can Learn from the Intelligence Behind Nature to Design a Better World.” Specifically biomimicry is about:

- Innovation inspired by nature
- Looking to the natural world for advice about how to live here more sustainably
- Borrowing nature's **designs** and nature's **chemical recipes** and **ecosystem strategies** to improve our own designs and ways of living on earth

Discussion points:

1. There was general agreement on the value of learning from nature and the need to examine opportunities in the African context.

9.7 Human zoonoses – an introduction to the National Institute for Communicable Diseases – Lucille Bloomberg

The National Institute for Communicable Diseases (NICD), a division of the National Health Laboratory Service, functions as a public health oriented, laboratory-based national facility with a mandate to gather intelligence on diseases of public health importance to guide national policy and programmes. The NICD serves as the national reference centre for the diagnosis of anthrax, plague, rabies, viral haemorrhagic fevers and avian influenza amongst others. Much of the surveillance for zoonoses affecting humans is passive surveillance and will depend on health professionals recognizing the clinical syndromes and submitting appropriate specimens. Given that there is a broad differential diagnosis of patients with for example fever and bleeding, skin lesions and encephalitis, it is likely that diseases such as Crimean-Congo fever, anthrax and rabies are under diagnosed. A confirmed laboratory diagnosis however is critical for appropriate management. A number of active surveillance studies have been carried out by the NICD in response to specific zoonotic outbreaks. These include clinical and serosurveys in exposed farm and agriculture workers during the avian influenza H5N2 outbreak in ostriches in the Eastern Cape in 2004 and the Rift Valley fever outbreaks in 2008. The NICD has the only BSL-4 facility in Africa for the diagnosis of viral haemorrhagic fevers. Crimean-Congo haemorrhagic fever is endemic in South Africa with 178 cases confirmed, mainly affecting farm workers, in the past 26 years, following on either tick exposure or contact with infected livestock. Rabies is endemic in South Africa with between 5 and 30 laboratory confirmed

cases identified each year. The NICD has also been active in identifying emerging zoonotic diseases; East African trypanosomiasis has been diagnosed in 18 returning travelers from 2001-2008. The RATZOOMAN project examined the incidence of three zoonotic diseases – plague, leptospirosis and toxoplasmosis – in humans, rodents and small mammals. There are gaps in the surveillance and diagnosis of a number of zoonotic diseases affecting humans; these include brucellosis and bovine tuberculosis. The issues of zoonoses in HIV-infected persons have not been addressed. Overall, human health surveillance is reactive to sentinel animal health events. The risk of zoonoses in communities near conservation areas raises many unanswered questions and presents many opportunities for research.

Discussion points:

1. The development of the human health component of the AHEAD-GLTFCA programme has been the slowest and it is important that this is improving through presentations such as this and that the channels of communication between, for example, OVI and NICD and rural agricultural departments are being opened. The need to develop rapid channels of communication remains at both personal and official levels.
2. The spread of leptospirosis and its occurrence in rodents, dogs needs examination.

9.8 The impact of HIV/AIDS on agriculture and food security: the case of the Limpopo Province –Petronella Chaminuka, L. K. Debusho, F. Anim, S. Nqangweni

This study aims to contribute to the gaps in quantitative, empirical studies on the impacts of HIV/AIDS on agriculture. The study uses a household vulnerability index to determine how HIV/AIDS affects food security in rural households. It is conducted in the Limpopo Province of South Africa and the data used in the analysis is based on a survey of sampled 218 households, focused group discussions and community seminars. Results of the analysis indicate that the effects of HIV/AIDS differ where a household is experiencing illness, as compared to when it has experienced death, and in both these cases there was decline in land cultivated, an increase in medical expenditure and a reduction in labour input into cropping. Using the Household Vulnerability Index reveals that only 28.9% of the households can be classified as coping households, 70.2% are classified as acute level households, and 0.9% as emergency level households. This study is relevant to the AHEAD programme in as far as HIV/AIDS is a cross cutting issue with huge social & economic implications. Further the relationship between HIV/AIDS and household labour availability may result in a shift to livestock production as well as changing land use patterns, and increased dependency on natural resources. Lastly there is need to look at diseases such as TB beyond the wildlife/livestock interface in line with the AHEAD Concept of One Health.

Discussion Points:

1. The levels of infection are frightening and HIV/AIDS could be come a major driver within the TFCA in the next 20 years.

9.9 A gender perspective on food security: moving from food security to food sovereignty in Africa – Edith Wanjohi

GENDER AND FOOD SECURITY: MOVING FROM FOOD SECURITY TO FOOD SOVEREIGNTY.

Meaning of food security:

Food security has been defined by FAO not only in terms of access to and availability of food, but also in terms of resource distribution to produce food and purchasing power to buy food where it is not produced.

“It is the capacity of households to procure a stable and sustainable basket for adequate food.”

WHY FOOD SECURITY ON A GENDER PERSPECTIVE

ROLE OF WOMEN ON FOOD SECURITY:

Women play a key role in the survival strategies of poor households. Women produce between 60 and 80 percent of the food in most developing countries and are responsible for half of the world's food production, yet their key role as food producers and providers and their critical contribution to household food security is only now becoming recognized.

It is imperative to apply a gender perspective in order to help projects succeed. It has been noted that where gender is ignored, projects tend to fail.

CHALLENGES THAT FACE WOMEN TO ACHIEVE FOOD SECURITY

☉ Access to resources

Resources are crucial in the development of food security strategies.

- Access to land. Not even 2% of land is owned by women
- Access to credit. For the countries where information is available, only 10% of credit allowances are extended to women

☉ Access to agricultural inputs.

- E.g. technological inputs such as improved seeds, fertilizers and pesticides is limited
- Infrastructure
- Access to education, training and extension services

Most of the extension services are focused on cash crops rather than food and subsistence crops, which are the primary concern of women farmers and the key to food security

- ☉ Access to decision-making-which is important for poverty reduction, food security and environmental sustainability; Access to research and appropriate technology.
- ☉ Thus, to improve food production for the household, greater priority has to be given to increasing women's participation in market production as well as other income-generating ventures.
- ☉ Access to seeds ; Intellectual property; Seeds storage; Impact of HIV/AIDS ;Equal access to market Multilateral trade rules (WTO) ; Subsidies ; Dumping ;Sustainable food security requirements

The challenge for the future will be to pursue a concrete attainment of equity in access to resources by women to produce food, and purchasing power to buy food, where it is not produced, thereby enhancing their potential to generate food security. Specific policy measures are required to address the constraints facing women farmers and to give special consideration to the needs of female heads of households

Recommendations to achieve food security

- ☉ ensure that women have the same opportunities as men to own land;

- ⊙ facilitate women's access to agricultural services tailoring such services to their needs;
- ⊙ encourage the production of food crops through the use of incentives;
- ⊙ promote the adoption of appropriate inputs and technology to free up women's time for income-producing activities;
- ⊙ improve the nutritional status of women and children;
- ⊙ provide better employment and income-earning opportunities;
- ⊙ promote women's organizations;
- ⊙ Review and re-orient government policies to ensure that the problems that constrain the role of women in food security are addressed.

WHAT IS FOOD SOVEREIGNTY?

Food sovereignty is the people's, country's, or state union's RIGHT to define their agricultural and food policy, without any dumping vis-à-vis third countries.

FOOD SOVEREIGNTY INCLUDES:

- ⊙ Prioritizing local agricultural production in order to feed the people, access of peasants and landless people to land, water, seeds, and credit. Hence the need for land reforms, for fighting against GMOs (Genetically Modified Organisms), for free access to seeds, and for safeguarding water as a public good to be sustainably distributed.
- ⊙ The right of farmers to produce food and the right of consumers to be able to decide what they want to consume, and how and who produces it.
- ⊙ The right of all nations to protect themselves from excessively cheap agricultural and food imports (dumping).
- ⊙ Engaging the participation of people in the definition of agrarian policies.
- ⊙ Acknowledging the right of women farmers who play a key role in agricultural production and in food issues.

Some of the principles to or key elements to food sovereignty are:

- ⊙ The right to food
- ⊙ The right to food is a human right which is not fulfilled for hundreds of millions of people. Food sovereignty will realize the right to food. *The right to adequate food is realized when every man, women and child, alone or together with others, at all times have physical and economical access to adequate food or means to buy it*
- ⊙ Access to and control over productive resources
- ⊙ Agro ecological production
- ⊙ The rights for consumers
- ⊙ Trade policies and local markets

How to move from food security to food sovereignty:

- ⊙ Raising agriculture productivity
- ⊙ Fostering pro-poor economic growth through improved market access, better infrastructure
- ⊙ Require added resources
- ⊙ Strengthening actors calls for acknowledging and respecting their diversity
- ⊙ Implement action: empowering with information and analysis
- ⊙ Sharing responsibilities through sound partnerships to achieve food and nutrition security
- ⊙ Governance pro-poor development policies
- ⊙ Expanded knowledge and technology transfer

Prioritizing actions:

- ⊙ The goals: achieving food security and ending hunger
- ⊙ Focusing on people and their problems
- ⊙ Strengthening governance and accountability
- ⊙ Invest in raising agriculture productivity
- ⊙ Invest in building human capacity
- ⊙ Strengthening actors: equipping the actors with strengths
- ⊙ Facilitating a human right –based approach
- ⊙ Building capacity on food and nutrition policy-making and policy assessment for all actors

Discussion points:

1. There is a need to consider the likely impacts of climate change and the possibility that old seeds may no longer be appropriate under changed conditions of rainfall and growing seasons.
2. The pressure to introduce genetically modified crops is having adverse impacts on traditional seeds and is eroding crop genetic diversity, as is the thrust to develop biofuels, which is likely to threaten food-security.

9.10 Implications of rising levels of HIV/AIDS for the management of common property resources – Wayne Twine, Lori Hunter, Laura Patterson

No summary available: please see PDF of presentation slides at http://www.wcs-ahead.org/gltfca_march2008/agenda_march2008.html .

9.11 Trends and Transitions in the Agincourt Health and Demographic Surveillance Site – Wayne Twine

No summary available: please see PDF of presentation slides at http://www.wcs-ahead.org/gltfca_march2008/agenda_march2008.html .

Discussion points on papers 9.10 and 9.11 delivered by Wayne Twine:

1. Are there similar data sets elsewhere? Yes, in KwaZulu-Natal, and smaller data sets in two other areas – all of which are showing similar trends.
2. Has there been any corresponding work on natural resources? Yes, there have been marked declines in vegetation but it is difficult to attribute this to HIV/AIDS.
3. A major mismatch between number of people living on the land and natural resources results in unsustainable use, for example, marula trees are cut down by people in need despite the valuable fruit they produce. In part, this is a result of customary rules being broken with impunity as social transitions take place.
4. Common property rights linking social and natural resource dynamics are important and CBNRM has made a difference where it has focused on user groups.

9.12 Promotion of HIV/AIDS mitigation and wildlife conservation through improved village poultry production – examples from southern Africa – Filomena dos Anjos, Robyn Alders, et al.

Alders, R.G.^{1,2,3}, Bagnol, B.^{1,4}, dos Anjos, F.^{1,5}, & Young, M.P.^{1,3}

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Introduction

Malnutrition, food insecurity and HIV/AIDS constitute the largest problems of the African continent. In Southern Africa food choices are limited, the amount of food consumed is relatively low, and the demand for nutrients is high. Depending on the nutrient and the severity of deficiency, the consequences of malnutrition may include growth stunting, anorexia, susceptibility to infections, behavioral changes, and learning disabilities.

Poultry production is one livestock raising activity that is able to supply animal protein for humans in the short term, with few resources. Poultry is a domesticated fowl used for both meat and egg production. This includes birds such as chickens, turkeys, ducks, geese, ostriches, quail, pheasants, guinea fowls and peafowl (Al-Nasser et al. 2007).

Many poor rural households in developing countries rely on village chickens (Alexander et al. 2004; Bell and Alders 2004), which are regarded as an important livelihood opportunity for the poor.

Village poultry significantly contribute to the livelihood of poor households: economically as starter capital, as a means to recover from disasters, as an accessible protein source and as income and in the exchange of gifts. In rural households affected by HIV/AIDS and areas surrounding protected wildlife populations, they can play a particularly important role (Alders, Bagnol, Harun and Young 2007; McDonald 2006).

IRPC/KYEEMA has demonstrated that development programs that aim to improve village chicken production have a positive impact in the rural communities. The objective of this paper is to present two examples of programs that are being implemented.

How village chicken production poultry can be incorporated into HIV/AIDS mitigation Programmes

Mozambique is among the ten countries in the world most affected by HIV/AIDS. In farming households affected by HIV/AIDS, the illness or death of family members leads to the loss of valuable labour resources (Alders et al. 2007). HIV and AIDS can increase vulnerability and food insecurity. The poor families are probably less qualified to face the shocks of HIV-related mortality. Women are biologically, socially and economically susceptible to HIV infection, and more vulnerable to the impact of AIDS associated with poverty. As women are the main caregivers for sick people, chickens can play an important role as they provide women with additional resources to carry out their task of supporting people living with HIV/AIDS (Alders et al. 2007).

In Mozambique the population of poultry is estimated to be around 25 million birds, of which over 90 percent (90%) are owned by small households (Alders et al. 2007). Village chickens play important economic, nutritional and socio-cultural roles in the livelihoods of the rural households. In general they are owned and managed by women and children, which are the most vulnerable groups in rural areas. Poultry is referred to as the 'last resource' to indicate it is the only capital that households have left when declining into poverty (Aklilu et al. 2008).

FAO is currently supporting the IRPC to work with local NGOs and the Provincial Livestock Services to improve the management of village chickens and the vaccination of village flocks against Newcastle Disease (ND). The main objectives of this project are to promote poverty alleviation, food security and HIV/AIDS mitigation through improved village poultry production in Manica and Sofala Province, in Mozambique.

The main activities of this project are: conducting baseline and annual PRAs; training NGO volunteers as community vaccinators against ND; training NGO technical staff and local government agricultural staff in ND control; implementing ND vaccination campaigns; training farmers to experiment with low-cost improvements to village poultry husbandry; and working with volunteers and staff of the local NGOs, local health posts and primary schools to promote village poultry production and consumption of poultry meat and eggs. To ensure that the activities are sustainable in the long term, the project is also working with local health posts and primary schools to promote village poultry production and the consumption of poultry meat and eggs. Where Newcastle disease is endemic, control of this disease will facilitate early detection of HPAI (Alders et al. 2007)

To promote the sustainability of ND control activities, community vaccinators charge farmers a fee to vaccinate each bird. Recovering the costs of the vaccine and compensating the community vaccinators for their labour are key sustainability issues. However, when HIV/AIDS mitigation is involved, access to chickens and the ND vaccine by vulnerable families must be secured. To ensure that vulnerable families within the community receive assistance, the vaccinators decided that families affected by HIV/AIDS that have five or fewer birds would have their birds vaccinated free of charge during the first two campaigns. The IRPC secured funding from charity groups in Australia to support the distribution of one rooster and four hens and ND vaccination vouchers to child-headed households and families affected by HIV/AIDS in the project area.

After several years of implementation of the project the results are encouraging with the number of chickens per family increasing.

How village chicken production poultry can be incorporated into wildlife conservation

Case: Improvement of village poultry production by communities surrounding South Luangwa National Park

With support from the Wildlife Conservation Society, the AHEAD program and others, IRPC/KYEEMA is working with Community Marketing for Conservation (COMACO) in districts surrounding the South Luangwa National Park in Zambia. The COMACO initiative addresses the multi-faceted needs of biodiversity conservation and sustainable development with due consideration of communities living within the area.

The conservation areas are infested by the tsetse fly, which limits the development of large animals such as cattle and goats. However, chickens survive in this environment. In the Luangwa Valley, chicken production plays an important role since people are not legally allowed to hunt wild animals (Bagnol 2007). According to COMACO (2006), small-scale poultry keeping is an important component of rural Zambian life. Poultry are a source of animal protein, a source of family income and serve functions within the traditional culture. Rural Zambians living around the Luangwa Valley typically keep between 10-15 free-range chickens for these purposes. However, poultry keeping has not been a dependable source of food and income due to high mortality rates that can eradicate entire flocks. Improvement of poultry production would result in increased food security, thereby decreasing reliance on poaching and other harmful practices. Villagers could also possibly sell excess animals and eggs through the COMACO system.

Considering the benefits of rearing chickens and knowing the major constraint (Newcastle disease) to village chicken production, COMACO and IRPC, in collaboration with Cornell University, submitted a proposal to improve backyard chickens in the COMACO area to the Animal Health for the Environment And Development initiative. The objectives of the proposal mesh neatly with this initiative, which is built on the recognition of the importance of animal health to both conservation and development interests. It was planned to carry out training of community vaccinators, extension workers and supervisors on ND control & HPAI prevention.

The first two trial vaccination campaigns have been implemented and anecdotal evidence suggests that the campaigns have been well received in four out of the five treatment Village Area Group (VAGs).

Conclusions

Increased village chicken production also has the potential to improve food security, assist in poverty alleviation, HIV/AIDS mitigation and to decrease bush meat consumption in rural populations.

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Discussion points:

1. Do people pay for Newcastle disease vaccinations? Yes. Households pay for vaccinations on a cost recovery basis.
2. Chicken production projects such as that described here provide examples of important self-help projects that can help villagers escape from the poverty trap and at the same time empower women.
3. Pond culture of tilapia can also provide a source of protein for households, however its development is seriously constrained by water availability and the escape of introduced fish into rivers and lakes has had serious adverse effects on indigenous species.
4. The successful production of chickens and eggs at a village level can help reduce the demand for bushmeat and so reduce poaching – the WCS-COMACO project (<http://www.itswild.org>) in the Luangwa Valley in Zambia is a case in point.

10 PROJECT UPDATES AND CONCEPTS

10.1 SELCORE, a Resilience Analysis of the South East Lowveld in Zimbabwe and the IUCN /CESVI Transboundary Livelihoods Enhancement Project – David Cumming

Three current developments in the South East Lowveld of Zimbabwe (SEL) that complement the AHEAD-GLTFCA programme are the South East Lowveld Collaborative Research Programme (SELCORE), a resilience analysis of the SEL, and the regional IUCN/CESVI project – *Livelihood enhancement through transboundary natural resource management in the Limpopo corridor*. The SEL lies below the 600m contour and extends from the Save River catchment in the east to the Shashi River in the west. It covers an area of approximately 50,000 km² and is characterized by low and uncertain rainfall, periodic droughts and a short growing season.

a) SELCORE.

The key objective of the SELCORE programme is

To foster an inter-disciplinary, participatory research and monitoring programme that will enhance landholders' understanding of ecological and social systems in the SEL and thereby improve:

- The region's natural resources;
- Policy frameworks for integrated management and conservation of natural resources;
- Resource management capacity, adaptability and resilience of linked social-ecological systems of the SEL;

in order to ultimately enhance the livelihoods and environmental security of people living in the South East Lowveld.

The programme, which started in January 2003, is based on a collaborative partnership between the rural councils of the eight districts comprising the SEL, three large-scale conservancies and four research units at the University of Zimbabwe and the National University of Science and Technology (See Fig. 1. below) – all of whom are signatories to a formal MOU. There are strong but informal links with three supporting NGOs, the AHEAD-GLTFCA Programme, CIRAD and external universities as well as with the Zimbabwe National Parks & Wildlife Authority and large-scale irrigation enterprises in the SEL.

The outputs of the programme have been a series of workshops involving the signatories and interested stakeholders to explore natural resource management problems, research needs and linkages in the SEL, within and between three main sectors, namely, wildlife and tourism, small-scale agro-pastoral systems and irrigation. Funding for participatory field research programmes has, however, been severely constrained. Options for extending wildlife-based tourism across land tenure regimes through joint ventures and private-public-community partnerships have been examined. The options for developing irrigation through linkages between large-scale agro-industrial and small-scale irrigators have also been examined with a view to improving food security and livelihoods in the region.

Additional activities have included a review of past research on wildlife and natural resource in the SEL and preliminary analyses of resilience and adaptability of linked social ecological systems. In partnership with CIRAD, the current distribution of wildlife resources in the SEL has been documented and SELCORE has assisted in the initiative to develop a Lowveld Wildlife Association.

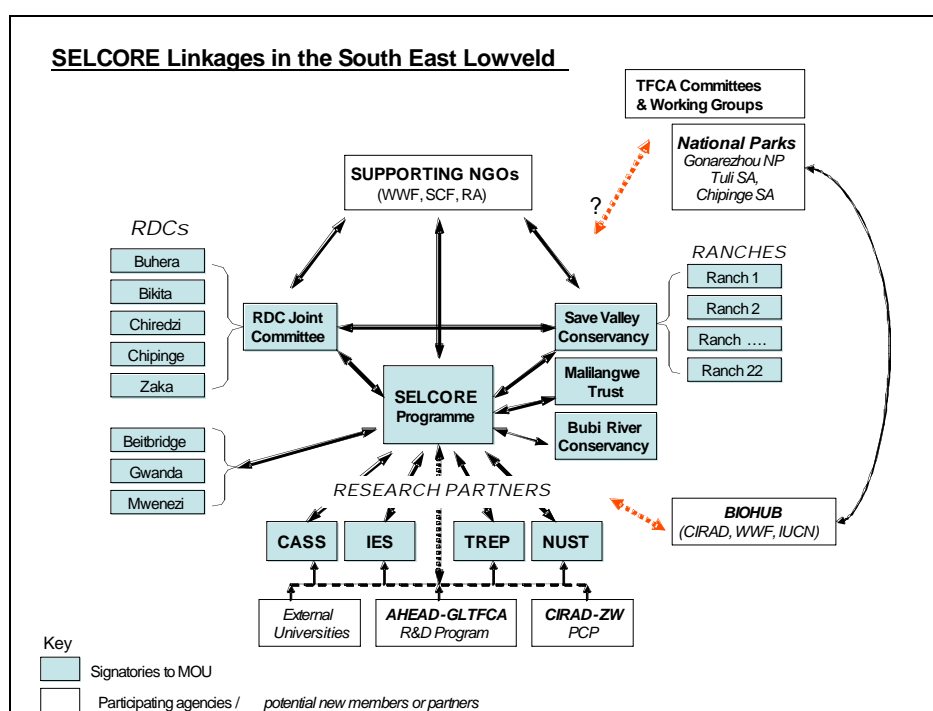


Fig. 1. Diagramme showing the structure and linkages of the SELCORE programme

b) Resilience Analysis of the SEL.

The Resilience Alliance has, with support from The Christiansen Foundation, undertaken to provide support for a more comprehensive exploration and analysis of the resilience of linked social-ecological systems in the SEL of Zimbabwe. Additional funding is being sought and it is expected that the six-month project will begin in June-July following a SELCORE meeting and workshop in May.

There are two definitions of ‘resilience.’ One, based on Holling (1973) defines resilience as “... the ability of systems to absorb changes of state variables, driving variables and parameters and still persist,” or more recently by Walker et al (2006) as “Resilience is the capacity of a system to experience shocks while essentially retaining the same function, structure, feedbacks, and therefore identity.” The other definition, also used in ecology, is based on the engineering concept where resilience is “... a measure of how fast a system returns to an equilibrium after a disturbance” (Pimm, 1984). An essentially similar definition is offered by Grimm et al (1992), namely, “Returning to the referential state (or dynamics) after a temporal external influence (disturbance) has been applied.”

SELCORE and the analysis planned for the SEL use the Holling and Walker definition and approach to resilience, where the emphasis is placed on maintaining and developing the capacity of social-ecological to adapt to shocks and surprises, or, where necessary to transform. An outline of the steps involved in conducting a resilience analysis is shown in Fig. 2 below.

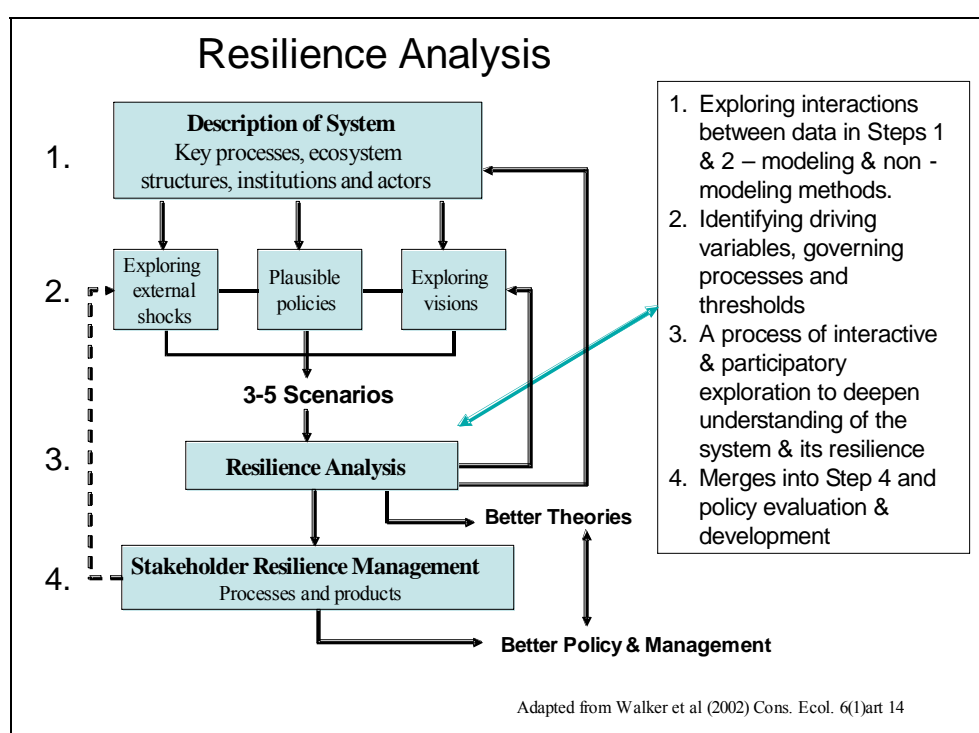


Fig. 2. An outline of the steps and activities involved in conducting a resilience analysis of a linked social-ecological system.

c) IUCN/CESVI transboundary project.

As indicated above the full title of the projects is “*Livelihood enhancement through transboundary natural resource management in the Limpopo corridor.*” The project concept and proposal, which focused on the potential of “value-added” transboundary natural resource management for rural communities, was initially developed by Giuseppe Daconto and Richard Bell in 2001. It was revised and updated three years later and has now been funded by the Italian Ministry of Foreign Affairs through IUCN-ROSA with CESVI as the executing agency and is due to start in the next month or two. The project is a three year effort with major components in Mozambique and South Africa, and a smaller component in Zimbabwe that will follow up on the earlier CESVI project centered in the SEL.

The long term goal, purpose, and outputs for the project are as follows:

Goal: Improve the standards of living of people adjacent to protected areas and living within the GLTFCA

Purpose: Contribute to the development of sustainable land and natural resource use systems in target areas adjacent to the GLTFP, and within the GLTFCA, and help communities to make the best use of the potential “value added” opportunities the TFCA has to offer.

Outputs: #1: Development of enabling policy frameworks for transboundary natural resource management by communities facilitated

#2: Ecological, economic and social advantages (value added) of TBNRM identified and interventions to realise value added opportunities developed

#3: Targeted natural resource management projects in each of the partner countries implemented

#4: Project management established and operational

10.2 Progress on and process for the conceptual planning and development of a wildlife veterinary unit for Mozambique – Nazare Manguze, Madyo Couto, Mike Kock and Michael Murphree

The process of planning and establishment of a Wildlife Veterinary Department is being run by the National Directorate of Veterinary Services (DNSV), Agriculture Department . This department has got specific terms of reference and responsibilities which include:

- Define, implement and supervise the surveillance programs and control of wildlife diseases that are transmittable to livestock and humans.
- Guarantee, at the interface, the implementation of prevention programs and control of the transmission of wildlife diseases, ensure epidemiological surveillance, and conduct surveys on wildlife diseases of importance to livestock and human health.
- Disease prevention, controlling and monitoring in Wildlife.

This new wildlife veterinary department, in cooperation with National Directorate of Conservation (DNAC) is in the process of obtaining equipment and facilities which will improve the response in diagnosing and controlling of disease.

There is positive cooperation between DNSV and DNAC which are working together within conservation areas, and with greater coordination with other institutions such as WCS, SANParks, and the SADC FMD Project. As a result of this coordination between different and multidisciplinary institutions it was possible to conduct a rapid assessment in Limpopo National Park in May 2007. Subsequent to this, a feedback and follow-up workshop was held in Chokwe, where a key question was identified as follows:

"How can we effectively manage wildlife and livestock within the GLTFCA, whilst preserving healthy ecosystems, improving livelihoods and sustaining economic benefits?"

The main follow-up actions that were identified include:

- Improve institutional coordination;
- Support Wildlife Veterinary Control Department;
- Strengthen Terms of Reference of Department;
- Provide training and advisory support (SANParks, WCS & SADC FMD Project);
- Provide equipment and logistics support
- Address wildlife /livestock / human health and disease transmission;

Improve and monitor human / wildlife conflict situation;
Improve communication on resettlement of communities.

Discussion points:

1. Is the proposed wildlife veterinary unit accepted within the Ministry of Agriculture given the split in responsibility for wildlife between Agriculture and the Ministry of Tourism? Yes, it is. All issues relating to animal health (both livestock and wildlife) are responsibility of the Ministry of Agriculture.

10.3 General discussion on AHEAD, AHEAD-GLTFCA Working Group, and overview of new AHEAD-GLTFCA Seed Grants Program (Steve Osofsky)

Steve Osofsky opened the discussion noting that AHEAD-GLTFCA was a loosely defined collaborative group that functioned as an open network of different disciplines. It is an open network with the mailing list and invitations for working group meetings going out to more than 250 people. It interacted with SADC when the programme started and contributed to the development of the SADC Regional Biodiversity Strategy (2006)– <http://www.wcs-ahead.org/sadc.html>. WCS will continue to try to support the costs of those needing assistance to attend Working Group meetings, but this depends on the availability of funding. Presently there are also USG-imposed constraints on supporting representatives of the Zimbabwe Government. Steve provided an overview of the new AHEAD-GLTFCA Seed Grants Program, and encouraged applications. [Readers are encouraged to go to http://www.wcs-ahead.org/workinggrps_limpopo.html for a detailed overview via the downloadable Request for Proposal (RFP).] Both The Rockefeller Foundation and The John D. and Catherine T. MacArthur Foundation were thanked for their generous provision of this catalytic support.

There is a need to leverage this excellent opportunity– both in terms of proponents trying to secure matching funds for their individual proposals, as well as in terms of all of us trying to find additional donors who may be interested in adding to the overall Seed Grants pot!

Successful applicants will be asked to outline their proposals at the AHEAD-GLTFCA Working Group meeting in the first quarter of 2009 and, similarly, to report back to the Working Group on their results in the first quarter of 2010.

Discussion points:

1. AHEAD-GLTFCA should remain a relatively loose, informal forum that provides a platform for interdisciplinary discussion. However there was clearly a need for ongoing and more involvement by government but it should not become ‘top-heavy.’
2. The meetings would benefit from setting aside more time for discussion of issues and of the material presented.
3. The AHEAD-GLTFCA programme is evolving and growing and this is a natural process.
4. Steve / WCS were thanked for efforts to secure Seed Grant funding.

11. WORKING GROUP REPORTS

Working groups were formed on Thursday afternoon and reported back to the plenary session the following morning.

11.1 Mozambique Veterinary Working Group Report-back (Madyo Couto)

i) Mozambique Veterinary Report. A draft version will be circulated for a period of a month for comments. The main issues include the coordination of institutions, the capacity of wildlife department, and interface issues involving disease transmission and human-elephant conflict.

ii) Fence in LNP. A 50 km section of fence in the south will be developed and it is important to draft, urgently, TORs for the EIA and draft specifications for the fence. Discussions will be held on how to proceed with the TFCA section (to fence or not?). Agreement was reached to carry out a participatory workshop to discuss landuse planning. Future steps will be based on results of workshop.

11.2 Health Working Group Report Back (Greg Simpson)

The formation of a working group, as envisaged at previous meetings, has not been realized and it was concluded that it is unlikely to work without an enthusiastic person to take the lead. Greg is considering taking this role.

11.3 Fencing Working Group (Ken Ferguson)

Eight people joined the group. At first focus was on a single case-study – the fence to the Massingir Dam and KNP. We then scaled up to a holistic approach – are fences needed? What are the alternatives? Why has it taken so long for fence research to come to the fore? It would be useful to bring forward case histories in a single volume, with technical manuals as well.

11.4 Proposal to start a subgroup/working group on theme #4 of the conceptual framework. (Marja Spierenburg)

Given that there were quite a number of presenters addressing this theme, it may be a good idea to establish a closer working relationship between the AHEAD affiliated(?) researchers working on livelihoods.

The group could work on livelihoods and rural development in and adjacent to the GLTFCA. Attention needs to be paid to issues such as governance, knowledge and the valuation of knowledge, land issues and land security. Linkages will be established with theme #5, also by studying how decisions are being taken and policies developed within the GLTFA. There is a perceptible need to compare livelihoods and rural development issues in the three participating countries. The aim is to establish a multi-disciplinary group.

Possible next steps:

- Core group will develop short proposal and call for participation
- Meetings with those interested to further develop the framework in relation to theme #4
- Present group and programme at next year's AHEAD-GLTFCA meeting

11.5 Theatre Working Group (Nick Ellenbogen)

The group discussed the resettlement issue surrounding the Limpopo National Park and how theatre could play a role in telling their story and conveying community perspectives and issues to decision makers. While theatre could play a valuable communication role in the GLTFCA no decisions were taken on further action in this regard.

12. MICROFLIGHTS

Informal microflight presentations and discussions we held on Wednesday and Thursday evenings and covered the following project topics:

12.1 Nada Samra, *Risk analysis of wildlife/livestock transmission of brucellosis and BTB to humans.*

Both diseases are endemic in KNP and the study will examine retrospective data, collect samples and conduct questionnaire surveys at household level around the park. Aspects discussed included the administration of questionnaires, access to medical records, identification of patients, and establishing links with traditional healers.

12.2 Crispen Murungweni, *Vulnerability and resilience of competing land-based livelihoods.*

The project is outlined under section 9.4.1(a) above and discussion and questions covered topics such as the size and nature of the study area, the differences that might exist between neighbouring communities over quite small distances, how long people had been living in the study area, long term cycles of agriculture and past shocks to the system, and the history of their settlement and movements which had been studied by Bannerman.

12.3 Xavier Poshiwa, *Redressing asymmetry in resource allocation through co-operation among livestock & wildlife systems.*

The project is outlined under Section 9.4.1 (c) above. The project would be focusing on resources such as grazing and water in what is an arid area with variable and uncertain rainfall. Particular attention would be paid to issues of scale mismatches in resource management. Coughenour's Savanna model would be used to explore various scenarios of resource allocation and management and issues relating to cooperation and co-management between parks and the surrounding communal lands. Issues raised in the discussion included external drivers such as food aid and currency differences across the Zimbabwe-Mozambique borders, the policy issues relating to financial and economic aspects of wildlife and livestock as land uses (e.g. work by Felix Murindagomo in Gokwe North in the 1980s) and issues of scale and transhumance.

12.4 Petronella Chaminuka, *Balancing eco-tourism and livestock production: Implications for livelihoods and the environment in Limpopo province.*

The project is outlined under section 9.4.2 (a) above. Much of the discussion and questions were related to the study area of approximately 600km² and its recent history in relation to options for wildlife and livestock as land uses. Other topics covered included options for tourism development such as joint ventures and private-public-community partnerships in the development of tourist lodges and the earlier WWF analyses of the economics of wildlife and livestock as land uses in Zimbabwe carried out by Jansen, Bond and Child.

12.5 Nicia Giva, *Agent-based simulations of land use negotiations with spatial land use models: Dealing with uncertainty in the Great Limpopo Transfrontier Conservation Area (GLTFCA).*

The project is outlined under Section 9.4.3(a) above and focuses on the interface dilemma of resolving conflict between people and wildlife along the 5 km multiple use strip along the Limpopo River inside the LNP. Resource use options for people within the park are limited. On the other side of the river agriculture and charcoal production are the major land uses. Drawing on experience in Zimbabwe, options for reducing wildlife-human conflict and benefiting from wildlife tourism were discussed in relation to the situation in the zone along the river.

12.6 Jessica Milgroom, *Proposal to start a working group focusing on livelihood issues.*

Jessica introduced the proposal which was fully supported by the participating group. The need to focus on linked social-ecological systems rather than simply on the social sciences was emphasized, as was the danger of viewing the GLTFCA as a uniform system. A report on the working group's deliberations by Marja Spierenburg is included under Section 11.4 above.

13. BRIEF INFORMAL PRESENTATIONS

13.1 *A rapid appraisal of human health risks and benefits of wildlife/livestock interactions in the Limpopo National Park* (Greg Simpson)

Three groups of factors that might act as determinants of human health in the Limpopo National Park were outlined. A questionnaire survey based on these determinants on health was administered using 74 semi-structured individual and group interviews that involved 16 settlements, 38 Key informants and 176 non-key informants. The most mentioned negative influences on health were crop damage, prohibition of hunting and increased human and animal traffic, while positive influences were malaria vector control, improved transport facilities, job creation and improved infrastructure. There is a need to improve and repeat survey and examine its potential use as a surveillance tool. It might be a useful addition to the LNP management plan.

13.2 Presentation by Xavier Poshiwa

(see section 9.4.1 (c) under the Competing Claims project and 12.3 under Microflights)

13.3 Presentation by Crispen Murungweni

(see section 9.4.1 (a) under the Competing Claims project and 12.2 under Microflights)

13.4 *Theileriosis in South Africa* (Fred Potgieter)

Apart from the classical Corridor Disease syndrome in cattle, seen when *Theileria parva*-infected buffalo and cattle come into contact in the presence of tick vectors, recent field observations in South Africa have indicated the following:

- a. Cattle which contract *T. parva* (buffalo-associated) do not all die acutely and some recovered cattle may become carriers and be a source of *T. parva* infections to ticks, which could result in cattle-to-cattle transmission of the infection, as seen in Zimbabwean Theileriosis and classical East Coast Fever.
- b. Buffalo mortalities due to Theileriosis have been reported and the causative organisms include *Theileria* spp. other than *T. parva*. Mostly seen in boma-reared animals in breeding projects and that are subsequently released into the wild.
- c. We have seen cattle mortalities caused by a *Theileria* spp. originally isolated from wild ungulates.
- d. We have also seen 'Tzaneen Disease' that resembles East Coast Fever, described in 1937, in cattle. It is unknown what the health status of the resident buffalo in Limpopo Park is and if there is contact between resident cattle and buffalo. With the introduction of KNP buffalo into the region it is expected that a potential corridor disease risk could have been created as the KNP buffalo are carriers of *T. parva*.

Fred would therefore be interested to collaborate with any party sampling buffalo and cattle in Limpopo Park. Assistance with characterisation of *Theileria* isolates from this region is offered, as well as a diagnosis of any cattle or buffalo mortalities if Theileriosis is suspected.

Relocation of wildlife and domestic stock often leads to disease outbreaks and we should be proactive in monitoring the presence of emerging and re-emerging disease syndromes.

14. THE ROLE OF THEATRE IN COMMUNICATION

14.1 Whose house is it anyway – the role of theatre in communication – Nicholas Ellenbogen

By directing a lively and active participatory session with demonstrations of acting and mime to carry his messages, Nick imparted, among many, the following:

1. Theatre serves conservation well.

2. Theatre offers a connection with human emotions and depicts scenarios that tell about people's feelings in ways that people engage with and respond to– they don't do so in the same way with scientific presentations and text. Scientists can be intimidating.
3. Scenarios (acted out) allow debate; African stories are not designed to put you to sleep but to stimulate debate.
4. The body signature of Africa comes from animals – particularly dangerous animals (mimed the movements of buffalo and lion) and these are reflected in body movements denoting prowess and accomplishment.
5. Observation is the key to theatre, and together with listening helps to get to the core of issues that communities may wish to impart. These take time as does the building of trust.
6. Theatre can function as conduit. Actors can talk to kings and the aristocracy in ways that scientists can't, film can do so too but it cannot adapt to its audiences and a play can be an open ended debate.

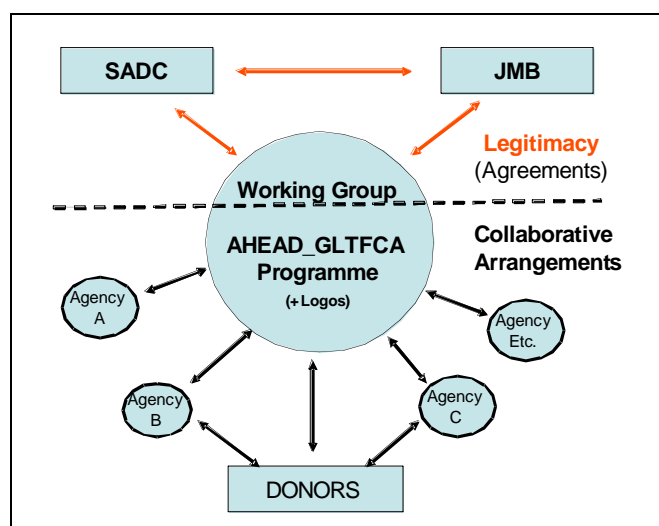
Discussion and comment:

1. Do you train actors? The Theatre for Africa Group now involves thousands of actors with groups performing in several countries. Regrettably, 21% have been lost to AIDS.
2. Theatre can contribute the AHEAD-GLTFCA programme by acting out a range scenarios and performing to a wide range of audiences – a powerful communications tool. The Limpopo NP removals issue is a case in point – it is an issue that needs dialogue and messages that can be transmitted in non-confrontational ways through theatre.
3. Theatre can be beneficial at a larger scale by first collecting stories from people and with their endorsement taking the stories to government through theatre, or even internationally (as in the case of sustainable use of natural resources by rural communities).
4. There is a need to highlight the plight of those affected by the resettlement programme.

15. AHEAD-GLTFCA INSTITUTIONAL STRUCTURES

15.1 Summary of previous suggestions for an institutional structure for the AHEAD-GLTFCA programme – David Cumming

The programme has focused on building a collaborative research and development programme, and letters of intent to participate in and support the programme have been signed by more than a dozen organisations which include government departments and research institutes, universities and NGOs. Several institutional models for the AHEAD-GLTFCA programme were examined at the 5th Working Group and were fully reported in the record of that meeting. The consensus from that meeting is summarised in the following diagramme.



Proposed AHEAD-GLTFCA institutional structure as outlined at 5th Working Group Meeting, February, 2005

While formal links with the JMB and with SADC have not been established there has been contact with, and a flow of information to, these bodies and the programme has operated effectively as a loose collaborative network. Letters of Understanding with relevant government agencies and universities in each country have established a level of formal recognition and collaborative intent for the programme. SANParks in South Africa has provided major support by appointing a coordinator for the programme while WCS has supported meeting and significant time inputs from S. Osofsky, M. Kock, D. Cumming and M. Murphree. The programme is currently continuing to try and build a collaborative R&D programme for the GLTFCA and is operating as loose network. The question is – should this change, and if so in what way?

Discussion:

1. Establishing a formal two-way link with the JMB is important so that the programme can provide technical information and analysis of key issues to the JMB and its committees. A new permanent, as opposed to a revolving, secretariat is being established and will be based in Phalaborwa and the most appropriate route to approach the JMB would be through the Conservation and Veterinary Sub-Committee.
2. The AHEAD-GLTFCA programme is already a regular agenda item on meetings of the Conservation and Veterinary Sub-Committee and a letter, or resolution, from this committee could be forwarded to the JMB.
3. The most appropriate time to follow through on these suggestions would be when the overall research policy for the GLTFCA is adopted by the JMB.
4. A more formal link with the JMB would establish a basis on which AHEAD could more readily and legitimately respond to JMB priorities.

15.2 The need for a core AHEAD-GLTFCA steering group: is now the time? Nicky Shongwe

In order to deal more effectively with such issues as the programme's funding strategy, finances, sustainability, coordination and communication and marketing, there is a need for more people to become involved in these matters and to provide advice and guidance to the programme as it develops. So far there has been an informal core group that has met from time to time and assisted in these matters but perhaps the time has come to establish a more formal structure to guide the programme.

Discussion and comments:

1. Committees can be a disaster and could stifle existing successful working arrangements of AHEAD-GLTFCA as a network. Formal committees require support and funds to enable members to attend regular meetings and to function effectively – are resources available?
2. There is a need for a core group, similar to those the Species Survival Commission of IUCN has within its specialists groups. Such a group is needed to develop and review new proposals and to keep extending the vision of the programme.
3. In terms of structural arrangements which would provide support for the coordinator, it would be acceptable to SANParks for another body (e.g. an NGO) to contract a secretary to work for the coordinator within the SANParks offices.
4. A formalized steering committee is not needed; a core of people that can be called upon as required by the coordinator would be preferable and workable. There is a need for a group of committed people to act as the primary drivers of the programme.
5. Both a core group, as suggested above, and a steering committee are needed. A steering committee would not replace the core group but would provide more direct support to the coordinator and her functions, especially on issues of communication and outreach.
6. It is difficult to see how the AHEAD-GLTFCA programme can continue growing without a steering committee. All disciplines need to be represented.

15.3 Institutional Commitments to the programme: status of letters of collaboration

The Letter of Understanding had been signed between the AHEAD-GLTFCA programme and agencies in Mozambique, South Africa, and Zimbabwe, International agencies, regional NGOs and overseas universities. The current list of signatories is as follows:

- Ministério do Turismo, Direcção Nacional das Áreas de Conservação, Mozambique
- SANParks, South Africa
- ARC-Onderstepoort Veterinary Institute, South Africa
- Institute of Natural Resources, University of KwaZulu-Natal, South Africa
- Division of Livestock and Veterinary Services, Zimbabwe
- Zimbabwe National Parks and Wildlife Authority
- Centre for Applied Social Sciences (CASS), University of Zimbabwe
- Tropical Resource Ecology Programme (TREP), University of Zimbabwe
- Centre de Coopération Internationale en Recherche Agronomique pour le Développement, CIRAD, Harare Office
- Wildlife Conservation Society (WCS), New York
- WWF Southern Africa Regional Office – SARPO, Harare
- Peace Parks Foundation (PPF), Stellenbosch, South Africa
- TPARI, Wits University, Johannesburg, South Africa
- Wildlife Epidemiology Group, College of Natural Resources, University of California, Berkeley.

Editor's note: all Letters of Understanding (LoUs) received to date are now posted at http://www.wcs-ahead.org/gltfca_lou/letters.html

16. NEXT STEPS, ACTIONS AND RESPONSIBILITIES

- Who else to bring to the table to expand the interdisciplinary nature of the programme
 - Gadd: suggests contacting Judy Oglethorpe (WWF-US) to get ideas from equivalent ecosystem health/human health programmes. [Editor's note: Judy has been aware of AHEAD and the AHEAD-GLTFCA initiative since inception, but has not been able to make meetings to date. Discussions are ongoing.]
 - Murphree: we need more participation (provided they want to contribute) from local govt. agencies and provinces.
 - Patrons – e.g., Gracia Machel
- Feedback (critical comment) on the Conceptual Framework and a basic, user-friendly summary are needed [Editor's note: summary is in process.]
- Members to add projects to the Summary Table that forms an appendix to the last meeting's minutes, via Nicky.
- Comments on joint research policy to Piet Theron – add additional research projects, e.g. from AHEAD-GLTFCA table.
- Explore further funding options – e.g. Ford Foundation.
- Next Meeting - 1st week in March -ideally in Zimbabwe if conditions allow.

17. THANKS AND CLOSURE

WCS supported travel and accommodation for some participants and covered the costs of hiring Merle, the conference room, teas, and most of the meals for all attendees.

Meg Cumming and Raoul du Toit are thanked for taking notes of discussions throughout the meeting.

Nicky's role as AHEAD-GLTFCA Coordinator was acknowledged with thunderous applause!

The meeting closed at c.1345 hrs.

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APPENDIX 1

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orange= those presentations for which PDFs of slides are downloadable via the AHEAD website.

**8th AHEAD-GLTFCA Working Group Meeting
5th – 7th March, 2008**

**Venue: Ingwenyama Conference and Sport Resort, White River,
Mpumalanga Province, South Africa**

NOTE: *Listed presenters of technical topics are kindly asked to prepare a one to two page summary ahead of time and circulate these and any additional material before the meeting, or have materials ready to distribute at the start of the meeting. Thank you in advance for your time and contribution.*

Day One: Wednesday 5th March

- 0900 Welcome** (Nicky Shongwe, Piet Theron)
- 0905 Introductions- around the room
- 0920 Brief introduction to *AHEAD, AHEAD-GLTFCA* and background; Objectives and format of the 8th Full Working Group Meeting and adoption/adjustment of agenda (Nicky Shongwe)
- 0945 “The *AHEAD-GLTFCA* Programme: Key Questions and Conceptual Framework Revisited” Presentation, basic overview of current Framework document (David Cumming)
- 1000 “Update on the GLTP Project and formation of the GLTFCA, including an update on status of major fences (up, down, or in between?)” (Piet Theron)
- 1020 “Progress in addressing animal disease threats (including zoonoses) and priorities in the GLTFCA- a JMB Conservation & Veterinary Sub-Committee Update on Challenges and Progress” (Roy Bengis, Chris Foggin, Markus Hofmeyr, Nazare Manguze), with time for group discussion
- 1045 Tea/Coffee break**
- 1115 “Current challenges and progress in the South East Lowveld, and the Lowveld Wildlife Association” (Raoul du Toit)
- 1130 “South Africa / Mozambique collaboration on animal disease surveys: progress update” (Peter Buss, Markus Hofmeyr, Lin-Mari de Klerk, Nazare Manguze, Carlos Lopez Pereira, Roy Bengis, Louis van Schalkwyk, Danny Govender)
- 1145 “Skills development for animal disease monitoring in the GLTFCA” (Emily Lane, Rosa Costa)
- 1200 “Surveillance systems – challenges and lessons learned from a human health perspective” (Rose Mulumba)
- 1215 “GIS – the power, the potential and the requisite preparation” (Craig Beech)

- 1230 Q & A, group discussion on above, implications for current work and priorities (facilitated by David Cumming)
- 1300 Lunch**
- 1400 “The EPISTIS programme – using remote sensing to manage disease at the wildlife – livestock interface” (Louis van Schalkwyk)
- 1420 “Foot and mouth disease control in and around Limpopo National Park: Initiatives aimed at integrated control” (Florência Cipriano, Gavin Thomson)
- 1440 “The CORUS Project – Development of an epidemiological network for monitoring the dynamics of foot and mouth disease within the GLTFCA” (Ferran Jori et al.)
- 1455 “CIRAD and South East Lowveld wildlife and domestic animal health projects: an update” (Michel de Garine-Wichatitsky, Alexandre Caron)
- 1510 “Commodity-based trade – new opportunities for economic activity in the GLTFCA” (Gavin Thomson)
- 1525 Q & A, group discussion (facilitated by Nicky Shongwe, Roy Bengis)
- 1545 Tea/Coffee break**
- 1615 “An evaluation of the west-southern fence of Kruger National Park and its implications in animal health control at the wildlife/livestock interface: Preliminary results” (Ferran Jori et al.)
- 1630 “The spatial dynamics of wildlife populations across and along Kruger National Park fences: the FIRM approach” (Ken Ferguson)
- 1645 “Fencing: what do we know, what do we need to know?” (Presentation and facilitated discussion, Michelle Gadd)
- 1730 Brief review of progress, outline of tomorrow’s programme and break for evening (Facilitator: Cumming) **Adjourn for dinner (dinner provided by WCS)- Please come back for early start on Day 2!**
- 1830 Microflights: a voluntary, relaxed and informal session to air and share proposals, ideas, news, etc.**

Day Two: Thursday 6th March

- 0830 “Update on The Kruger Scenarios project, other scenarios work” (Michael Murphree)
- 0845 “CASS community-based scenarios (IDRC) project update” (Chaka Chirozva, Shylock Muyengwa)
- 0900 “Governance, accountability, and CBNRM in Southern Africa- lessons learned, and ways forward” (Patricia Mupeta)

- 0920 “Competing claims on natural resources – overcoming mismatches in resource use through a multi-scale perspective” (Jens Andersson)
- 0935 “Courting the rain: what role for resettlement as a development initiative?” (Jessica Milgroom)
- 0950 “Biomimicry – lessons in sustainability from nature” (Claire Janisch)
- 1020 Tea/Coffee break**
- 1100 “Human zoonoses – an introduction to the National Institute for Communicable Diseases” (Lucille Blumberg)
- 1115 “The Impact of HIV/AIDS on agriculture and food security: focus on household vulnerability in Limpopo Province” (Petronella Chaminuka, L. K. Debusho, F. Anim, S. Nqangweni)
- 1130 “A gender perspective on food security: moving from food security to food sovereignty in Africa” (Edith Wanjohi)
- 1145 “Trends and Transitions in the Agincourt Health and Demographic Surveillance Site” (Wayne Twine)
- 1200 “Implications of rising levels of HIV/AIDS for the management of common property resources” (Wayne Twine, Lori Hunter, Laura Patterson)
- 1215 “Promotion of HIV/AIDS mitigation and wildlife conservation through improved village poultry production- examples from southern Africa” (Robyn Alders, Filomena dos Anjos)
- 1230 Q & A, group discussion (Facilitator: Nicky Shongwe)
- 1300 lunch**
- 1400 “SELCORE, the IUCN / CESVI project and the Resilience Alliance project concept for the South East Lowveld” (David Cumming)
- 1415 “Progress on and process for the conceptual planning and development of a Wildlife Veterinary Department for Mozambique” (Nazare Manguzeze, Madyo Couto, Mike Kock, Michael Murphree)
- 1430 Tea/Coffee break and GROUP PHOTO**
- 1530 Working sessions on “problems that need solving” – break-out group themes TBD by participants
- 1700 Brief review of progress, outline of tomorrow’s programme and break for evening (Facilitator: Cumming) **Adjourn for dinner (dinner provided by WCS)- Please come back for early start on Day 3!**
- 1830 More microflights: a voluntary, relaxed and informal session to air and share proposals, ideas, news, etc.**

Day Three: Friday 7th March

- 0830 Plenary session: report back from Day 2's afternoon working sessions, discussion, and feedback on other sessions from Day 2 (Facilitator: Nicky Shongwe)
- 0900 "Overview of the new AHEAD GLTFCA Seed Grants Program, including plans for a peer review process, ideas for bringing other donors to the table, Q & A, group discussion." (Steve Osofsky, Nicky Shongwe)
- 0930 "Brief informal presentations / updates by proponents of other concepts / projects developed so far / ideas arising from microflights session and perspectives offered by the Lindsay overview report" (Facilitators: Cumming, Theron)
- 1030 "Whose house is it anyway? – the role of theatre in communication" (Nicholas Ellenbogen)
- 1100 Tea/Coffee break**
- 1130 "Institutional commitments to the programme and institutional arrangements: status of 'letters of collaboration,' etc." (Facilitator: David Cumming)
- 1145 "Need for a core AHEAD GLTFCA steering group- is now the time?" (Nicky Shongwe, Steve Osofsky, et al.) and group discussion (Facilitator: David Cumming)
- 1200 Next steps, actions and responsibilities (Facilitator: Nicky Shongwe)
- 1230 Next meetings (incl. of "Steering" or "Core" Group? Annual meeting in Feb/March 2009? Also- IUCN WCC in Oct. '08)- when, where, and seeking volunteer hosts? (Facilitator: Nicky Shongwe)
- 1300 Thanks and closure (lunch provided)**

April 2nd, 2008 post-meeting updated version