

Report:

**Feedback Report by the Kruger to Canyons
Biosphere Region Delegation, on their exchange
visit to the Rhön Biosphere Reserve in Germany.**

Submitted to:

GTZ-MRDP, Kruger to Canyons Stakeholder Council and other
Interested & affected people / organisations.

Prepared by:

Jenny Newenham in consultation with and on behalf of the
Kruger to Canyons Delegation.

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KRUGER TO CANYONS
BIOSPHERE REGION

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Acronyms / Abbreviations

- **ARC** Agriculture Research Council
- **BfN** Bundesamt für Naturschutz (Federal Agency for Nature Conservation)
- **BR** Biosphere Reserves
- **CBO's** Community Based Organisations
- **EE** Environmental Education
- **EXCO** Executive Committee
- **GDP** Gross Domestic Product
- **GTZ** Deutsche Gesellschaft für Technische Zusammenarbeit
- **IDP** Integrated Development Plan
- **K2C** Kruger to Canyons Biosphere Region
- **KNP** Kruger National Park
- **LDP** Local Development Program
- **LEDET** Limpopo Provincial Department of Economic Development Environment Tourism
- **MaB** Man and the Biosphere Program (UNESCO's)
- **MRDP** Mpumalanga Rural Development Programme
- **MTPA** Mpumalanga Tourism & Parks Agency
- **RBR** Rhön Biosphere Reserve
- **SAEON** South African Exchange Observation Network
- **SANPRKS** South African National Parks
- **SAWC** Southern African Wildlife College
- **SDI's** Spatial Development Initiatives
- **SMME's** Small, Micro, & medium enterprises
- **TOR** Terms of Reference
- **TPA** Transvaal Provincial Administration (existed at the time of the old Provinces in South Africa)
- **UNESCO** United Nations Educational, Scientific and Cultural Organisation
- **WRF** Wits (The former Witwatersrand University – now known as the University of Johannesburg) Rural Facility.

Executive Summary

Introduction:

Delegates of the Office of the Premier of Mpumalanga Province in South Africa visited Germany in 2006 and it was observed that the Rhön Biosphere Reserve (RBR) in Germany could serve as a good example for the Kruger to Canyons (K2C) Biosphere Region in South Africa. The Office of the Premier of Mpumalanga Province requested GTZ-MRDP to investigate the opportunity for an exchange program between the 2 Biosphere Reserves.

Late 2006 GTZ-MRDP consulted its project partner, Mpumalanga Tourism and Parks Agency (MTPA), and after discussion with a few members of the K2C EXCO it was agreed to try to develop a well-prepared exchange program between the 2 Biosphere Reserves. GTZ-MRDP funded 10 members of the K2C region (selected by the EXCO of K2C) and 2 MRDP people to visit the RBR from the 10th June 2007 through to the 16th June 2007.

This report mainly serves as a summary of the proceedings prior to and during the K2C delegation's visit to the Rhön as well as an expression of the focus for the immediate future.

Area Visited:

The Rhön Biosphere Reserve (RBR) is located just to the south of the central region of Germany. It is situated in three of Germany's States: Hessen, Bavaria and Thuringia.

Objectives of the visit:

The main intention of the Kruger to Canyons delegation's visit to the Rhön Region was part of an exchange process that will also include a return visit from a Rhön Delegation late 2007 or early 2008. Specific objectives identified included:

- See, experience and gain exposure to as many of the Rhön initiatives as far as possible.
- Learn from the RBR's experiences and processes (over the past 16yrs).
- Identify if there are any potential partnerships that could be established between the 2 Biosphere Reserve initiatives.
- The members of the Kruger to Canyons delegation to compile a wish list.
- Compilation of a report that can be used by all delegates to report back to their respective institutions and structures.
- Propose a way forward for the K2C, in a step-by-step process, so that it can be used as a simple tool to guide the K2C EXCO towards achieving the aims for the project.

The process prior to and during the exchange visit:

The process has included the following aspects:

- Preparation workshop before the visit
- Formation of 4 groups from the K2C delegation group, each with a specific theme on which to concentrate when in the Rhön.
- Each group to compile a list of questions relating to their group theme, which they would aim to get answered while in Germany.
- Identify common entities between the 2 BR
- Understand the potential visit elements, and prioritise them according to the needs of the K2C Biosphere Region.

Group feedback:

The report captures the feedback summaries that each group gave each morning, while in the Rhön.

Discussion

Wish lists

Each of the K2C delegates compiled a wish list – essentially a list of items that they personally believe are important to the growth of the K2C Biosphere Region. Each person's list is presented in this section. There were no guidelines given for the preparation of the lists, so each one is quite different in format. However many of the wishes are similar.

Expected Outputs

As a result of the exchange visit with the RBR it is believed that there could be a variety of different products achieved. These expected outputs are captured in this section of the report.

Way forward

In this section the 10 most common items on the wish lists compiled have been graphically portrayed in a flow chart and then further explained in a table. These items are believed to be the most important issues that need to be addressed in the immediate future in order for the K2C Biosphere Region to progress and for the organisation to become a fully functional and sustainable environmental framework that provides support and guidance to the people of the K2C region.

Conclusion

There is no doubt in any of the members of the K2C group, that visited the Rhön, that this was an incredibly valuable experience. Everyone was able to learn and be exposed to many new ideas and concepts. On the whole there were some aspects of the RBR that made a greater impression than others, these include the production of renewable energy and the support and encouragement received by the government in becoming a more ecologically & economically sustainable community. The general support the German government provides to the RBR as an organisation, especially in terms of financial assistance, was of particular interest to the K2C group, for example, there are approximately 15 people employed by the German government (or departments thereof) as officials of the RBR. Another feature that was particularly impressive to the K2C delegation was the unity and commitment of the people of the RBR. These people have been innovative in promoting the MaB principles and are supportive of the RBR, many of the people work together to create success.

As a result of the exchange program with the Rhön, the K2C members have been able to formulate what they would like to see happening in the K2C region and what is needed for the K2C organisation to evolve into a dynamic, productive and supportive organisation that can help lead the greater K2C community towards a more ecologically and economically sustainable life style.

Everyone is appreciative of the opportunity afforded them, and the K2C group looks forward to implementing some of the concepts learnt, and "Africanizing" some of the others so that these lessons learnt are worthwhile to broader stakeholder group.

1. Introduction

Delegates of the Office of the Premier of Mpumalanga Province in South Africa visited Germany in 2006 and it was observed that the Rhön Biosphere Reserve (RBR) in Germany could serve as a good example for the Kruger to Canyons (K2C) Biosphere Region in South Africa. The Office of the Premier of Mpumalanga Province requested GTZ-MRDP to investigate the opportunity for an exchange program between the 2 Biosphere Reserves.

Late 2006 GTZ-MRDP consulted its project partner, Mpumalanga Tourism and Parks Agency (MTPA), and it was agreed to try to develop a well-prepared exchange program between the 2 Biosphere Reserves. GTZ-MRDP identified the similarities between RBR in Germany and the K2C Biosphere Region in South Africa, and after discussing the idea with some selected members of the Executive Committee (EXCO) of K2C Biosphere Region it was believed that there was an opportunity for a viable exchange program between the 2 Biosphere Reserves. The RBR received UNESCO recognition in MaB program approximately 16 years ago, compared to the K2Cs' recognition towards the end of 2001. It was believed that with the Rhön's experiences (in the 16 yrs of existence), and that because Germany is considered a first world and developed country (compared to South Africa's third world and developing status), that there would be opportunities for the RBR to share its lessons learnt, transfer some knowledge & skills and perhaps create partnerships between the two initiatives, hence the exchange program evolved. The scope of the exchange was to pertain to Sustainable Development in particular.

GTZ-MRDP funded 10 members of the K2C region (selected by the EXCO of K2C) and 2 MRDP people to visit the RBR from the 10th June 2007 through to the 16th June 2007. Dr Doris Pokorny (Deputy Head of the Bavarian Unit of the RBR) prepared a comprehensive program and facilitated the exchange visit during this period.

This report serves as a summary of the proceedings prior to and during the K2C delegation's visit to the Rhön, as well as providing a summary of lessons learnt / first impressions, a wish list for the Kruger to Canyons Biosphere Region and a way forward.

2. Area visited

The Rhön Biosphere Reserve (RBR) is located just to the south of the central region of Germany. It is situated in three of Germany's States: Hesse / Hessen, Bayern /Bavaria and Thüringen / Thuringia. The area comprises of small picturesque rural villages, surrounded by grasslands / fields that have agricultural and conservation value, as well as pockets of forests. The region is rich in history dating back many centuries, which is reflected in the landscape. In order to preserve this historical landscape and prevent it from being lost through the process of reforestation that will naturally follow as agricultural land in the area is left fallow, the RBR was formed. The RBR is approximately 185 000ha in size, and had a population of about 135 618 people in 2001. Agriculture and tourism are the main economic drivers of the region.



Figure 1: A map of the Rhön Biosphere Reserve, which bridges three of Germany's States: Bavaria, Hesse & Thuringia. The red dots are places visited with specific talks or presentations and the grey are those that were just visited in order to understand the bigger picture of the RBR.

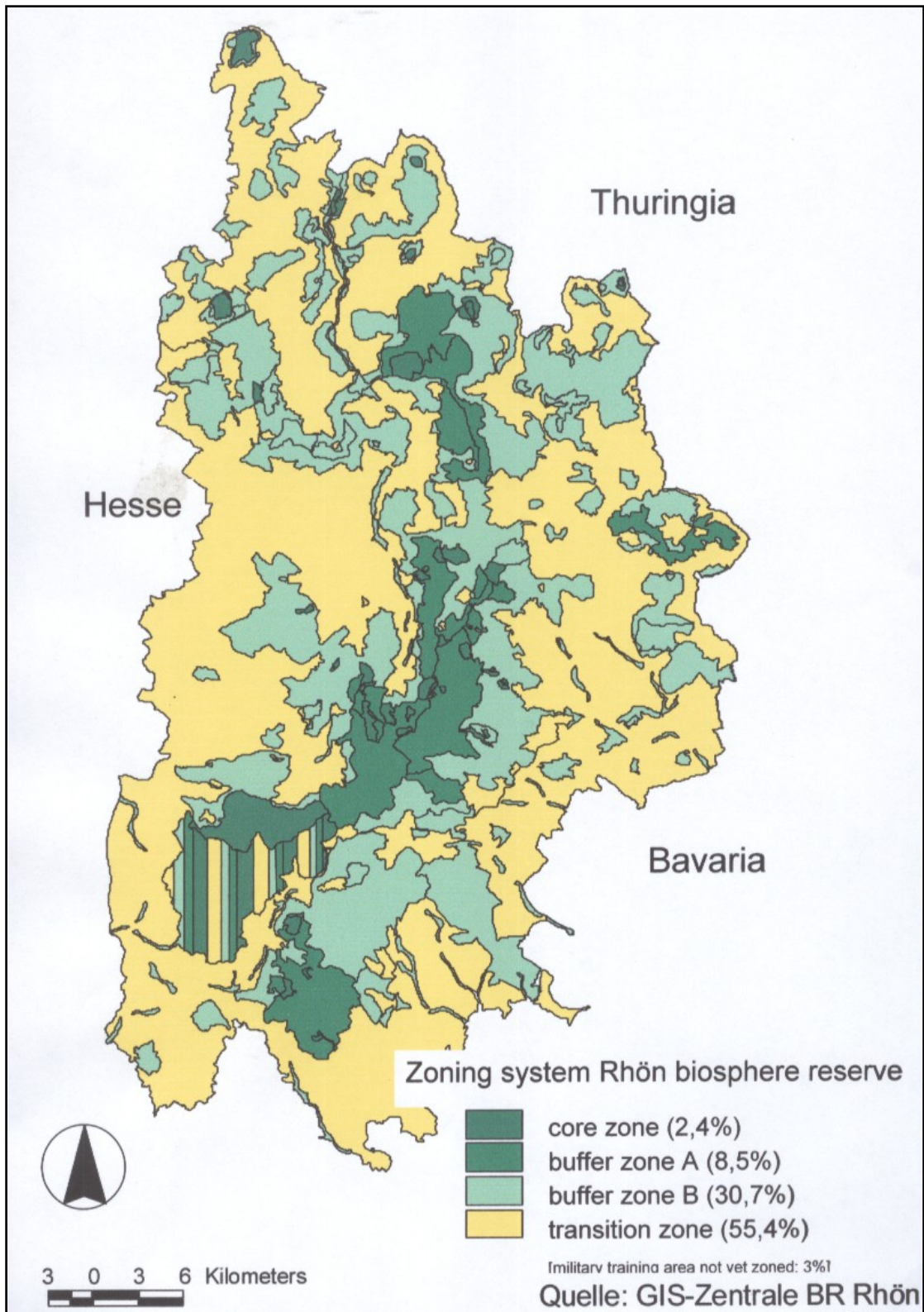


Figure 2: The zonation map of the Rhön Biosphere Reserve.



Figure 3: A rural village typical of the Rhön region.



Figure 4: The K2C Delegates in the Rhön landscape: part of the orchards of the Rhön Apple Initiative

3. Objectives of the visit

The main intention of the Kruger to Canyons delegation's visit to the Rhön Region was part of an exchange process that will also include a return visit from a Rhön Delegation late 2007 or early 2008. BfN will fund the RBR visit through a co-financing agreement with GTZ-MRDP. However there were also specific objectives identified as part of the K2C visit, as highlighted below (many of which will most likely be quite different from those identified by RBR on their return visit):

- **See, experience and gain exposure** to as many of the **Rhön initiatives** as far as possible in the time allowed (with special reference to the participatory approaches, the vision, organisational & institutional structure/s / arrangements, the management plan & its implementation, the role of different stakeholders, their approach/es to marketing & labelling, and the private sector involvement in the RBR).
- **Learn from the RBR's experiences and processes** (over the past 16yrs) and establish what could be implemented in the K2C region, taking into the consideration differences & similarities of the 2 Biosphere Reserves.
- **Identify** if there are **any potential partnerships** that could be established between the 2 Biosphere Reserve initiatives.
- The members of the **Kruger to Canyons** delegation to **compile a wish list** (that is in line with the MaB principles), which will help prioritise the projects / policies that are desired in the K2C region. These projects will gain the most attention, but due to their nature may not necessarily be the first to be implemented.
- **Compilation of a report** that can be used by all delegates to report back to their respective institutions and structures.
- Propose a **way forward for the K2C**, in a step-by-step process, so that it can be used as a simple tool to guide the K2C EXCO towards achieving the aims for the project.

4. Process prior to and during the exchange visit

Considerable groundwork went into the preparing for the K2C exchange with the RBR. In order to achieve the maximum benefit from the exchange visit a preparatory workshop was held (on the 4th & 5th May 2007, at Otters Den). The workshop encompassed the following:

- Division of the participants into working groups, which would remain the same for the period spent in Germany.
- Presentation by Suhel on the Rhön BR, background to the initiative and its potential visit elements.
- Summarise the common entities between the 2 Biosphere Reserves.
- Prioritise the potential visit elements.
- Groups formulated questions (pertaining to their specific scope) that they would like answered during the visit.
- Identify potential long-term outputs as a result of the exchange visit.

4.1. The groups

In order to facilitate capturing of information during the exchange, four groups were established, which meant that specific sections of the visit would

be addressed in suitable detail and given sufficient and appropriate attention. The groups comprised of the following members and each group was tasked with the following scopes.

Group 1:

Group Scope: Administration; funding; institutionalisation; participation; vision & mission; management plan.

Members: Mr. Remember Makhubela (K2C EXCO Member); Mr. Lesiba Masibe (LEDET); and Ms. Maryna Matthee (MTPA)

Group 2:

Group Scope: The Private sector and organisational involvement; agricultural involvement / projects and influences; tourism development & community involvement; regional marketing; and SMMEs (Small Micro Medium Enterprises).

Members: Ms. Debby Thomson (K2C Co-ordinator); Mr. Solly Themba (SANPARKS – Kruger National Park); and Mr. Mike Scott (Agricultural Sector).

Group 3:

Group Scope: Capacity building; research; partnership programmes; policy and strategy establishment.

Members: Ms. Marie-Tinka Uys (K2C EXCO Member); Ms. Michelle Terblanche & Ms. Mirjam de Koning (MRDP)

Group 4:

Group Scope: Inclusion of Biosphere Regions in Government Development Plan (SDI/LDP's etc.); Role of government linkages to CBOs (Community Based Organisations)

Members: Ms. Jenny Newenham (K2C EXCO Member); Mr. Jabez Canzi Lisa (Municipal Manager Bushbuckridge); and Mr. Rifilwe Jonas Ramothwala (Municipal Manager Maruleng)

4.2. Questions raised prior to departure

In order to guide the process during the exchange visit in Germany, the respective groups came up with questions to guide the members' focus at the time of the presentations and visits to specific features of the Rhön. These were the questions raised prior to the visit, however when actually in Germany there may have been a shift in the focus of the questions, as issues pertaining to the Rhön initiative became clearer. Some of the questions that were formatted during the planning workshop are the same / similar in the different groups, these have not been removed as it emphasises the importance allocated to that particular information.

GROUP 1:

1) Administration

- What is the German budget for full time officers?
- What are the problems associated with 3 entities managing the Biosphere Reserve given the status of a federal system?
- What is the role of the National department of environment in Germany?

2) Funding

- What are the sources of funding (e.g. government, donors, EU, private companies) for the Rhön Biosphere Reserve and how much in terms of total running costs?
- How much money does the Biosphere Reserve generate for itself (related to administration) and what are the main sources?
- Do they have funding for research?
- How is the auditing of the Biosphere Reserve functioning?

3) Institutionalisation

- How did the institutionalisation of the Biosphere Reserve evolve since inception and what were the challenges (e.g. legality)?
- How is the management committee structured?

4) Participation

- What mechanism did Rhön Biosphere Reserve use to foster broader public participation and buy-in for the Biosphere Reserve?
- How did the level of participation change over the past 16 years?
- How are the different societies/communities involved at different levels?
- How is the private sector participation accredited and which standards and adherence.

5) Vision & Mission

- How successful do you rate the achievement of the Biosphere Reserve mission after 16 years of experience?
- What is the long-term strategy plan?

6) Management plan / Framework

- Was there any conflict in drawing up the management plan for the different land uses (e.g. commercial forestry/fire/natural grazing) and how is the implementation of the plan monitored?
- If there are two opposing development proposals how do you address the situation (conflict management)?
- How do you handle the labour dynamics?
- What are the challenges with regard to different zonation (existing in other areas) policies and fragmentation e.g. policy/strategies for a buffer zone versus provincial legislation?
- How is the Biosphere Reserve governed in Germany and what is the role of a Biosphere Reserve in Environmental Impact Assessments? Does the Biosphere Reserve impact on town planning and spatial development plans and how is it taken into consideration and what is the legal standing?

GROUP 2:

- 1) How do we market to specific stakeholders e.g. farmers versus tourism versus rural community?
- 2) How do we market to the outside – nationally / internationally?
- 3) How do they handle the land claims process?
- 4) What support (and or success) has followed land claimed?
- 5) How do we create/strengthen tourism in agriculture?
- 6) How do they sell their brand names?
- 7) How can the Biosphere value-add to existing businesses?
- 8) To which standards have they applied for certification e.g. 'Bio-labels/Rhön quality'?
- 9) Do they have previously disadvantaged communities and how have they been included?
- 10) Who funds development of marketing /promotion material and who coordinates its production?
- 11) Do private operators do adventure activities and do they have contract examples of private operators on state land (concessions)?
- 12) What Biosphere Reserve related activities existed pre-registration and how were they brought under the umbrella of the Biosphere Reserve?
- 13) What subsidies/incentives were given and who funded, controlled and managed them?
- 14) How is energy produced and distributed and where is it coming from?
- 15) Have there been any mayor steps / programmes to involve the private sector organisations?
- 16) More information on wood pellets production and use is wished.
- 17) How have they encouraged tourism migration into less developed / rural areas?
- 18) Do they have noticed a trend of re-settlements fro rural to urban areas or vice versa and how has the Biosphere Reserve dealt with it?
- 19) We would like to have more information on 'Bionade' and learn about the production technology, possible export partnerships and marketing.
- 20) What are the needs for product exportation/importation?
- 21) What support has been given to development/marketing of SMMEs?
- 22) Some information is requested on the inclusion of potential investors not living in Biosphere Reserve region.



Figure 5: Debby and Marie-Tinka taking notes in the Rhön Countryside during the visit to the Grazing Project.

GROUP 3:

- 1) University of Applied Sciences in Fulda
 - 1.1. What kind of internship programmes & summer school classes do they present?
 - 1.2. What are the admission requirements
 - 1.3. How much are the enrolment fees?
 - 1.4. Are there bursaries available?
 - 1.5. Who are they targeting with the internships and summer school?
 - 1.6. How should the K2C go about it if they are interested in co-operation with the University (possibly an exchange between the University of Fulda & SAWC in Limpopo).
- 2) Identify exposure needs of Tertiary education students to African habitats (for custom made educational tours). What kind of experiences are German students in sustainable development looking for when they come to Africa?
- 3) Learn from Rhön experience on local – provincial – national interactions on Biospheres
- 4) Learn from Rhön on coordination of research
 - 4.1. What kind of research are they doing?
 - 4.2. How do they co-ordinate research?
 - 4.3. How do they provide access to the results of the research / how are results disseminated?
- 5) Learn on monitoring and evaluation procedures and how they are managed (what are lessons learned in capacity building and research and how is it implemented?)
 - 5.1. How do they measure progress in terms of the objectives of the Biosphere?
 - 5.2. Are measurements (e.g. the number of bed nights in 2005) & research results utilized for strategic planning & if so how?
- 6) With regards to policy / strategy (it is premature to engage now but questions will develop):
 - 6.1. Scaling up to next political levels: what is Rhön Biosphere Reserve experience?
 - 6.2. What level of policy support is the Biosphere receiving from the Government?
 - 6.3. How did they mobilize for this policy support?
 - 6.4. How do they influence policy development & policy implementation?
 - 6.5. Where and how did they start; prioritisation?
- 7) Environmental Education & cultural beliefs & practices:
 - 7.1. Are there any cultural beliefs & practices around the utilization of natural resources that are unique to the area?
 - 7.2. Is the BR advocating for these beliefs & practices – if yes – how?
 - 7.3. Are these cultural beliefs and practises incorporated into environmental education?
 - 7.4. How is environmental education implemented?
 - 7.5. Are these cultural beliefs and practises captured on a database? If yes, how did they go about it?

GROUP 4

- 1) How is the relationship between government (all / different sections) and the Biosphere Reserve?
 - What steps have been taken to establish 2-way links with National, Provincial and Local Government?
 - How does government assist the Biosphere Reserve?
 - What roles do National, Provincial and local government play with regard to the Biosphere Reserve?
 - Do they have Biosphere Reserve representivity / mouthpiece in municipalities (if not how are the Biosphere Reserve concepts / ideas etc. put forward)?
 - How have they got people on board / supportive of the Biosphere Reserve – especially to vulnerable groups (women, youth, disabled)?
 - Do they have 'conflict' between different socio-economic classes and if so how is it addressed?
- 2) How do they sustain themselves – where have they got funding?
- 3) How do they handle/process development applications? Do they encounter any challenges/problems with this?
- 4) Do they have community driven projects/organisations (if so what for e.g.) and how do they incorporate them within the different municipal / development frameworks especially at local level?
- 5) Do they have a positive economic contribution to National GDP? What is their approach? What/which sectors and any specific organisations/initiatives?
- 6) Does the Biosphere Reserve have to 'pay' levies of any kind to any government level?
- 7) Are there any kind of rebate (tax)/incentives to Biosphere Reserve stakeholders / Biosphere Reserve 'members' – especially if adhering to Biosphere Management plan / Framework or biodiversity conservation, etc.?
- 8) What services do the municipalities provide to Biosphere Reserve?

4.3. Potential Visit Elements & prioritisation

The K2C delegates were guided by Suhel's presentation on the Rhön Biosphere Reserve and the highlighting of potential visit elements in the region. They were highlighted as follows:

- 1) **Administration/management**
 - 3 provinces / different administrative levels
 - Competencies to run Biosphere Reserve
 - National Park within Biosphere Reserve
 - Regional labelling
 - Etc.
- 2) **Tourism & visitors management** (mountain biking; hiking; horseback riding; gliding / para-gliding)
- 3) **Incentives** for private sector & farmers for conservation

- 4) Extensive **farming** & grazing
- 5) **Energy** (public; communal level) Interest in solar energy; CO² emission reduction; bio-fuels; energy saving methodologies, management technologies and the link with the wood/timber industry
- 6) **Wood carving/carpenters** + other **handicrafts** (large scale; SMMEs) Interest in Bionade success story; Rhön shopping centres and on-line sale
- 7) Certified **organic farming** (ginger; litchi, oranges, mango, etc.)
- 8) **Accommodation & restaurants** (large; medium; B&B) Look at the business and marketing concept
- 9) Open air **museum** – history
- 10) **Summer-school University of Fulda** – Sustainable Regional Development
- 11) **Land claim issues** & land titles

The workshop participants agreed that it is very difficult to prioritise the identified visit elements, as some visit elements are more important for the agricultural sector; others for the private sector and again others for the public sector. Therefore it was recommended by the group that the main focus is to be on the administration/management and funding of a Biosphere Reserve; the marketing/promoting of a Biosphere Reserve; and the job creation opportunities (agriculture/tourism) of a Biosphere Reserve as these are currently the most urgent priorities for Kruger to Canyons Biosphere Reserve.

It was commonly felt that we should get the maximum out of this visit and learn from the successes and failures so that we can also give feedback to DEAT (Department of Economic Affairs and Tourism) on this. Therefore it is also suggested to include people from DEAT in the visit feedback workshop in August and in the return visit from Rhön Biosphere Reserve to Kruger to Canyons Biosphere Reserve planned between November 2007 and January 2008.

4.4. Common entities between the 2 Biosphere Reserves

A list was compiled of the common entities between the two Biosphere Reserves. Despite the RBR & K2C being located in different countries, on different continents and in different landscapes, there are still a number of similarities between these initiatives:

- **Land claims** (In the RBR referred to as re-privatisation e.g. in old East Germany – in K2C associated with apartheid era)
- **Trans-boundary** (across different South African provinces / German states)
- **Important Abiotic resources** (such as soil and clean air in both, but water in particular in the K2C)

- **Participation processes** (both BR have placed significant importance on the need to engage stakeholders in the processes associated with a Biosphere Reserve)
- **Disparity of wealth** (although more obviously extreme in the K2C)
- **Rural environments** (both BR located in rural environments typical of their respective regions – both have advantages & disadvantages associated with their respective locations).
- Have **risks associated with change in landscapes** (Both BR have their main economic drivers of the region dependent on the landscapes in particular Agriculture and Tourism. The Rhön has the slogan "*Eat the view*", which illustrates the point particularly well).
- **Dependent on tourism** as one of the main economic drivers of the region (In the Rhön it is quite diverse, and includes agri-tourism especially with organic products derived from the region, while in the K2C much of the tourism is associated with nature based products, especially revolving around the diversity of wildlife and vistas).
- **Established sectors / links** (A variety of different land use practices in both BR – very well established and linked to the histories of each region)
- **Agro biodiversity** (In K2C there is a diversity of agricultural activities at subsistence and commercial levels, but in the Rhön there is also the genetic diversity within the agricultural industry, such as the apple variation).
- **Regions of research** (Both regions have significant amount of ongoing research in a variety of fields: social – conservation).
- **Handi-craft based on timber** (Although different kinds of products crafted in the different BR regions, different implications on the use of timber from the respective regions and different approaches towards the use of indigenous wood – the Rhön more sustainable).
- Both BR **seeking new (sustainable) opportunities** for economic and social growth.
- Focus on **organic products** (although more evolved in the Rhön).
- **Nature orientated sports** (both associated with tourism, with the K2C needing to expand some sectors e.g. hiking and mountain biking).

4.5. The program in the Rhön Region

All the preliminary documentation (developed mainly in the preparatory workshop) was sent to Doris Pokorny. Doris then prepared a program guided by the prioritisation of the visit elements and the questions the different groups hoped to get answered. The end result was a program that included all the desired visit elements, and a balance between presentations, talks and field excursions. The program was as follows:

Table 1: A detailed program of the itinerary while visiting the Rhön Biosphere

Monday 11 th	Tuesday 12 th	Wednesday 13 th	Thursday 14 th	Friday 15 th	Saturday 16 th
6am: Arrival in Frankfurt Airport, travel by bus to Fladungen in Bavaria State of Germany	8am: Group report back on the day before.	8am: Group report back on the day before.	8am: Group report back on the day before.	8 am: Group formulate and discuss impressions & lessons learnt.	9.30am: Check out of Hotel
9.30am: Check into Hotel Sonnentau (part of RBR) & Welcome to region by DORIS. Received info packs for the trip.	9.15am: Talk on the organisational structure of Rhön biosphere reserve ; trilateral cooperation, etc; by Dr. DORIS POKORNY, MICHAEL GEIER and colleagues from Bavaria (unfortunately Hessen and Thuringia administration unit colleagues not able to make it)	9.30am: Presentation on the summer school programme and (possible cooperation opportunities between SAWC or WRF in K2C and the Hessen Global Project of Fulda University) by THOMAS BERGER, managing director of inter-research association.	9.30am: Travel to the border between Bavaria & Thuringia (close to Frankenheim) to learn about the former iron curtain (& the social & environmental implications). Walk to one of the border towers - guided by Dr. DORIS POKORNY	9.30am: Visit to Ostheim to see the production of the innovative organic drink: Bionade ; learn about the philosophy of marketing and integration of regional resources by PETER KOWALSKY managing director and partner of Bionade GmbH	10am: Rhön open air farmhouse museum by DORIS MÜHLFELD, international Tourist guide
11am: Bus trip of the area – travel to Kreuzberg , where walk to the crosses on top of the hill for view of the area – DORIS POKORNY (Deputy Head of Bavaria – RBR) provides background to the Rhön with regards to: Landscape, history & land use.	10.30: Talk on education for sustainable development by MICHAEL DOHRMANN, manager of information centre. Environmental Education outsourced – a function of Biosphere Reserve / Unit staff.	10.30am: Presentation on Rhön renewable energy - projects and activities; energy saving by NORBERT SCHMÄLING, manager of Rhön renewable energy agency.	11.30am: Travel to Kaltensundeim – in the old East Germany for a talks and exposure to the organic agricultural enterprise (cooperative) by Dr. ARIBERT BACH, managing director of Agrarhöfe Kaltensundheim	11.30am: Forest walk to Lichtenburg fortress ruin through the Beech Forests. Guided by 2 Foresters involved in research and management of the forests .	12pm: To Ostheim town festival and have lunch. Exposure to the street market concept and traditional activities.
1pm: Lunch @ Gasthof am Markt in Obereisbach for traditional dishes & drinks (close to RBR Bavaria offices)	11.30: Talk on the Rhön quality label & the evolution of the labels, as well as the biosphere reserve partner enterprises by MICHAEL GEIER, head of Rhön biosphere reserve, Bavarian unit	1pm: Lunch in Sonnentau Hotel - family owned hotel. Talk on the Sonnentau; philosophy, link to RBR and marketing by SONJA KARLEIN and HEINO GOLDBACH, hotel owner.	1.15pm: Lunch with organic products from the co-operative's shop (Rhönhofe). Then Talk on the land re-privatisation after the fall of the iron curtain by Dr. ARIBERT BACH, and ULRICH SCHRAMM. Interview with the media. Walk around the farm to see the agricultural practices and the use of wood chips as a renewable energy source.	1pm: Lunch at the Fortress and look at the ruins of the building. 2.30pm: Travel & check into the Rhön-Park-Hotel . The hotel is located in Hausen – Roth and is a provider of large-scale tourism facilities. Presentation by HELMUT GRÄSSLE, director of Rhön-Park-Hotel	2.30pm: Travel to Riedenberg to meet the Mayor and CHRISTIAAN to view the Hydro-electric station and learn about the methods used.

	<p>1.30pm: Travel to Bischofsheim to have lunch at Gasthaus Dickas and experience the cooperation between gastronomy and agriculture; talk by CLAUD VORNDRAN, chairman of association "From the Rhön-for the Rhön"</p>	<p>2.30pm: Visit to Großbardorf renewable energy sites (local solar energy power station - outside the RBR- but significant implications & leader in the pilot project) – guided and presented by MATTHIAS KLÖFFEL, district chairman of farmers association and managing director of Agrokraft GmbH</p>			
<p>2pm: Talk by KLAUS SPITZL (Managing director of Rhön nature park and Biosphere Reserve association) @ the Bavaria Admin Unit, on Tourism Infrastructure and management.</p>	<p>4.30pm: Travel to Hausen to learn about the Rhön apple initiative. Visit & walk in the orchards – guided by ADAM ZENTGRAF, deputy chairman of Rhön apple initiative association. Afterwards get to sample the wide variety of value adding products.</p>	<p>5pm: Visit to Langenleiten to see the wood sculpturing as a traditional and modern handcraft by HERBERT HOLZHEIMER, self-employed professional artist and master of wood sculpturing.</p>	<p>2.30pm: Travel to the Rhön-Shop in Tann to learn about the marketing concept of handcraft and Rhön products, as well as the challenges experienced in setting up the shop. Talk by SILKE BRÄUNING, shop owner.</p>		<p>4pm: Travel by bus to Frankfurt Airport</p>
<p>8:30pm Dinner at Hotel Sonnentau</p>	<p>8H30pm: Dinner at Hotel Sonnentau</p>	<p>7pm: Travel to Hermansfeld Fasanerie to see the women's project on processing of wild herbs and fruit "wild and green". Talk on the background and link to the RBR by ULRIKE and JENS LILIENBECKER, owner of Fasanerie Hermansfeld restaurant, regional development planners and project initiators. Dinner in the restaurant – meals produced from the local products.</p>	<p>4.15pm: Visit to carpenter "hand, + wood + heart", in Gersfeld. Talk and shown around the workshop by OLAF STRÖDECKE (owner & craftsman). Only uses timber acquired from trees of the region – creative, top quality items produced – mainly furniture orientated.</p>	<p>4pm till late: Travel to Rother Kuppe Hotel to meet invited guests (presenters and guest speakers from the week) for K2C to provide conclusions of the past week; presentation of Kruger to Canyons BR by delegates from South Africa; reflecting the lessons learned during the Rhön excursion; and ideas for further cooperation such as the Biodiversity day – presentation provided by SUHEL regarding this idea / concept). Dinner – German BBQ / South African Braai.</p>	<p>10pm: Depart for Johannesburg</p>
			<p>7pm: Travel to have dinner at the Restaurant Fischerhütte Edwin, in the village of Ginolfs. Talk by owner and the implications of being associated with the Rhön BR.</p>		

5. Group Report backs

Each of the group's reported back on what was encountered the day before. They had to take into consideration their particular group's scope and the questions they had raised prior to departure for the Rhön Region. Key elements were addressed.

5.1 Feedback on Day 1 (11th June 2007):

Feedback was presented on the 12th June for the day before (11th June). This incorporated the introduction to the Rhön landscape (history, geology, land use types etc) by Doris, Walk up the Kreuzberg, talk on Tourism infrastructure & management; exposure & presentations to the landscape maintenance program and grazing project.

Group 1's feedback on day 1:

❖ Q2: Funding:

- ◆ European Union is supporting a number of projects e.g. The Large-scale grazing project.
- ◆ Number of institutionally independent projects

❖ Q4: Participation:

- ◆ RBR has established Information Centres for MaB
- ◆ Environmental Education considered an important activity within the RBR
- ◆ Brochures – a wide variety of brochures been produced – helps to expose features and products of the RBR and its philosophy – readily available at the Admin Units, Restaurants, shops etc.
- ◆ Involving clubs etc in signage development – not left to the RBR Admin to do / organise everything.
- ◆ Compensation for Environmentally friendly activities or those in line with the landscape management principles of the RBR, e.g. The landscape maintenance program

Note: A broader spectrum of Brochures for the K2C should be able to be produced – linking products / features in the K2C with the MaB concept & philosophy

❖ Q6: Management Plan:

- ◆ K2C has only for nature reserves / Protected Areas – RBR has one for the BR – in book format – the RBR has already gone through 1 UNESCO evaluation.
- ◆ Management framework for MaB

[**Impression:** impressed with the Tourism signage used within the Biosphere Reserve].

Group 2's feedback on day 1:

❖ Q5: Strengthening Tourism in Agriculture

- ◆ Within the RBR there has been the opening up of (private) farms to activities such as: Bicycle trails, Hiking trails, Fishing, Historical overview of the area, 4x4 tracks, Geological evolution.

Note: Rhön has trained volunteer guides for hiking routes – K2C could look at a similar programme where the guides could work on a tips basis

❖ Q7: Value adding to existing businesses:

It is clear that the RBR has embraced the following to enhance products from the Rhön Region:

- ◆ Branding of all related products
 - ◆ Collaboration & acceptance between neighbouring stakeholders towards the biosphere concept as well as partnership with the RBR Administration Unit and support of each other.
 - ◆ Potential government funding agency projects e.g. the many EU funded projects that were visited
 - ◆ Compensations given by the government towards stakeholders participating in biosphere projects/ principles
- Note:** K2C could get creative activities implemented such as Mango / Citrus picking excursions.
- K2C needs to try and implement similar strategies / approaches in order to add value to the K2C Product as a whole.
- ❖ **Other:**
 - ◆ Signage in RBR has been holistically discussed – signage in the K2C – specific to the BR needs Re-working / unification

Group 3's feedback on day 1:

[Impression: Appreciated Doris' inputs to create a sense of place with regards to: Geology, History, Landscape etc].

- ❖ **Q3: Interactions**
 - ◆ Role of Biosphere Reserves to balance interests of various stakeholders and link it to spatial planning of development
 - ◆ There is a commitment from the (Rhön) Biosphere Reserve to balance the needs of different interest groups against the bigger picture of conservation and preservation, and to do so in line with spatial planning.
- ❖ **Q6: Policy & strategy**
 - ◆ Creating positive attitude changes: The RBR / government supported & / funded Visitor Centre/s & Pilot projects help to achieve this – can be viewed as a strategy to get buy-in from the community.
- ❖ **Other**
 - ◆ Differences between the RBR and K2C to be noted: In the K2C extra attention will be required with regards to safety (from wild animals and crime) and landownership rights (different from those in the RBR)

[Impressions: The differences between the two BR were highlighted in terms of:

- ◆ Security (Wildlife & Crime)
- ◆ Need to generate income
- ◆ Differences in land ownership rights & how it is changing with regards to K2C's Land Restitution & Communal Land.]

Group 4's feedback on day 1:

- ❖ **Q1: Relationships between different Government levels**
 - ◆ Links between the Nature Conservation Agency & State of Bavaria (Farmers especially)
 - ◆ Roles: "funding"; enabling legislation e.g. access to private property
- [Impression: RBR has not had to "work" to get people on board & not specific to vulnerable sectors (youth, women & disabled) – youth not**

encouraged / given (sufficient) opportunities to stay => sustainability being questioned]

- ◆ Conflict – not socio economic but perhaps land use activities e.g. the Aero tourism
- ❖ **Q2: Funds to sustain themselves**
 - ◆ EU helping in projects e.g. Grazing project
- ❖ **Q4: Community projects**
 - ◆ Community driven projects e.g. Grazing Project – Framers association and landscape Management
- ❖ **Q5: Contribution to National GDP**
 - ◆ Yes perhaps small at present e.g. Restaurants & products seen so far
- ❖ **Q7: Tax rebates / incentives available**
 - ◆ Cheaper to lease land (Pulp factory, Basalt mining, Car part industry & Grazing project)



Figure 6: Morning Report Back sessions at the Sonnentau Hotel.

5.2. Feedback on Day 2 (12th June 2007):

Feedback on the 12th's activities was presented on the 13th of June. The activities encountered the day before included: a presentations on the RBR organisational structure; the environmental education programs; and evolution of the Rhön quality labels. There was also the visits and exposure to the "From the Rhön for the Rhön"; and the Rhön Apple Initiatives.



Figure 7: Taste testing the large variety of Rhön Apple Products.

Group 1's feedback on day 2

❖ Q1: Administration:

- ◆ Budget: German Government (National Department of Environment) able to budget for approximately 15 officers & pay their salaries.
- ◆ A very structured system in place for payment of "farmers" for managing land on behalf of the State.

❖ Q2: Funding:

- ◆ Money generated does not go directly to administration of Biosphere Reserve but to the enterprises themselves.
- ◆ Funding is available for research – a process in place to apply for such funds.
- ◆ Auditing – a direct government function / donors.

❖ Q3: Institutionalisation:

- ◆ Consists of: 3 Tiers + municipalities + private sector (refer to appendix)
- ◆ There are various task teams for the 3 main functions / co-ordination / advising committees.

❖ Q4: Participation:

- ◆ To start off with it was Government initiated (top down process).

Note: K2C in a very different situation with regards to grassland to forest succession – RBR mows to maintain the grassland (very NB for grazing land) – preventing it from reaching the climax status. K2C uses fire as a management tool, and not against the natural successional process of grassland to indigenous forest – relevant to escarpment region.

- ◆ Now community & private sector involvement with lots of buy-in (promote their own enterprises under the RBR) – more bottom up now.
- ◆ Various structures and interest groups
- ◆ Common branding VERY important.
- ❖ **Q5: Vision / Mission**
 - ◆ Promotion of local products; Common identity for the region & Common branding for the region = > very successful.
 - ◆ Environmental Education Programs; Sense of PRIDE & adherence to the management plan/s have contributed to the success of RBR Initiative as well as the individual enterprises.
- ❖ **Q6: Management Plan / Framework**
 - ◆ Not legally binding (in Hessen & Bavaria) – this is sometimes a problem for the RBR – but as with the K2C existing legislation & policies prevail.
 - ◆ Government agencies still responsible for development proposals, planning, monitoring & regulation (e.g. EIA Development proposals).

Group 2's feedback on day 2 :

- ❖ **Q1, Q2, Q10: Marketing**
 - ◆ Lot of marketing through EE exercises
 - ◆ No individual marketing strategies
 - ◆ Funded from within and the EU
 - ◆ Labels only just been finalised.
 - ◆ Individual labels created for specific initiatives e.g. the thistles for the "From the Rhön for the Rhön" and the organic label.
 - ◆ Unified marketing
- ❖ **Q6: Selling of Brand Name**
 - ◆ Unity within the region
 - ◆ Supported by the stakeholders
 - ◆ ? Has the RBR registered / trademarked the label / Brand
- ❖ **Q7: Value adding to businesses**
 - ◆ Unified marketing
 - ◆ Level of standards for understanding
 - ◆ Assistance provided to increase professionalism by being part of the bigger picture.
 - ◆ Local stakeholder support re: farmers / restaurants
- ❖ **Q8: Certification of standards**
 - ◆ Introduction of a new holistic level of classification
 - ◆ Use of existing standardisation categories & adopt or adapt as required for a Biosphere Reserve
 - ◆ Funding of process comes from already established structures.

Note: Challenge for the K2C to convince all stakeholders of the K2C product as a whole.

Note: Lessons to be learnt by K2C:

- RBR has a strong tie to historical traditions
- RBR committed to Conserving historical & cultural knowledge
- Use of bio-mechanical methods e.g. insects used for aphid control in apple orchards
- Education of kids specific to age
- RBR uses available resources e.g. houses become museums [All of the above have scope to be addressed in more detail in the K2C].
- The RBR Initiative acknowledges that it is impossible to reach / address all everybody so works on a basis that stakeholders are identified as interested & committed individuals / groups -> pilot projects => the rest will get on board as they proceed. [Especially pertinent to K2C, which is about 10 x bigger than RBR].



Figure 8: An example of the Biological Control used in the Apple Orchards

❖ **Q17: Migration & Tourism Influx**

- ◆ Region is marketed as a 100% true experience (at least of products encountered): Food is local; People are local; History is local = *Local is Lekker!*

❖ **Q10: Funding**

- ◆ The RBR enterprises have easier access to available funds – K2C will need to be more creative and innovative in sourcing similar funding.



Figure 9: The K2C delegates having lunch at Gastehaus Dickas on the Tuesday, an establishment that is part of the "From the Rhon for the Rhon" initiative.

Group 3's feedback on day 2:**❖ Q3: RBR interactions on different levels**

- ◆ Administration units linked to different tiers of government (refer to organogram in the appendix).
- ◆ Each one of them has unique challenges.
- ◆ There are 3 tri-lateral working groups.
- ◆ Private Sector & civil society represented through the umbrella association and working groups.

❖ Q4: Research co-ordination

- ◆ 4.1 RBR ensures that the research that takes place is of special relevance to, and answers the questions of the BR (applied research).
- ◆ Pilot projects e.g. for real life examples.

❖ Q7: Environmental education

- ◆ 7.1. Cultural beliefs & practices regarding resource utilisation -Yes e.g. the apple initiative, bread baking according to traditional methods and herbs from the herb garden used to make traditional medicine (ointments)
- ◆ 7.2. RBR advocating for these beliefs & practices - Yes, through the Apple Initiative & labelling; preservation of the historical open landscape; bread making, & hay making
- ◆ 7.3. Incorporated in the EE lessons & demonstration use of kitchen gardens.
- ◆ 7.4. EE is outsourced in Bavaria State. Other states organise their own EE programs.
 - Visitor Centres & outdoor programmes
 - Theory is linked to practices
 - Use of civil service (9 months) and / or other volunteer work
- ◆ Cover all age groups, with special focus on grade school level, which comprises of the majority of the participants in the EE program.

Group 4's feedback on day 2 :**❖ Q1: Relationships between different Government levels**

- ◆ There is a structure in place that links local & State bodies (as well as helping to achieve the goals set at different levels). Refer to appendix.
- ◆ Various government bodies pay the salaries of people employed by the RBR Organization (varies from 1 State Admin Unit to the next).
- ◆ To access other funding for projects the RBR helps co-ordinate this and is also able to apply (to the Government for example) for funding of specific projects.
- ◆ All municipalities (of the region) are welcome to get involved in the RBR initiative. Initially (it may still be ongoing?) a competition was held to get a buy-in by the municipalities. The competition was titled "Who wants to be a model Community in the RBR?"
- ◆ Involvement of the Youth: 1.Competition held by Gastahaus Dickas (major role player in the "From the Rhön for the Rhön Initiative") to attract cooks / chefs. 2. Right from the very

Note: K2C participants were particularly impressed with the:

- Passion, commitment & pride
- co-operation
- Persistence (e.g. Bionade, From the Rhön for the Rhön & Apple Initiative).

Shown by all projects encountered – a lesson to be learnt by the K2C Region.

Note: K2C needs more commitment & support from different Government levels (especially buy-in by Mpumalanga) – but there still needs to a significant amount of independence – an Africanised Public-Private partnership

young upwards the youth are exposed to environmental education with a number of innovative projects.

❖ **Q2: Funding to sustain the BR**

- ◆ Sustained through government funding & EU funds. Need to apply for specific projects.

❖ **Q4: Community Projects**

- ◆ The “From the Rhön for the Rhön Initiative” & “Apple Initiative” are good examples of community driven projects. They are independent although may have acquired some support funding. Initiatives such as these provide in-house training, job creation & have significant co-operation between members of the community.

❖ **Q5: Contribution to National GDP.**

- ◆ Variety of tourism related products e.g. (as mentioned above) contribute to the National GDP. Mostly indirectly.

❖ **Q7: Tax rebates / incentives?**

- ◆ All initiatives (that were encountered) within the RBR felt that the RBR has had a positive influence on their particular initiative (even though they may not have been access funding e.g. the Apple Initiative was unable to access funds).

[**Impression:** K2C Understood (& appreciated) the challenges associated with a Government Body being the only body allowed to deal with advertising of agricultural products – In SA the challenge is for farmers to market their products – especially as it is costly.]



Figure 10: Hotel Sonnentau, the accommodation for most of the stay in the RBR, and an enterprise committed to the principles of a Biosphere Reserve.

5.3 Feedback on Day 3 (13th June 2007):

Feedback on day 3 was given on the morning of the 14th. Day 3 encompassed: presentations on the Summer School Program, renewable energy projects in the region and the Sonnentau philosophy. There were excursions to the Solar energy farm, the wood sculptor, Herbert Holzheimer, and the Fasanerie Hermannsfeld Restaurant involved in the "Wild & Green" Initiative.

Group 1's feedback on day 3 :

❖ Q1: Administration:

- ◆ Covered previously

❖ Q2: Funding:

- ◆ Require more info on the EU funding (e.g. what are the requirements, and processes involved when applying for funding & is funding limited to only countries in the EU? – i.e. Are there opportunities for the K2C BR?)
- ◆ Involve all academic institutions for K2C research program.

❖ Q3: Institutionalisation:

- ◆ All clear now on the Rhön Administration entities and the organogram (refer to appendix), but now need to look at how the K2C organogram can be structured and how positions will be funded.
- ◆ K2C needs to strive to get a buy-in from our 2 spheres of government (Provincial & Municipal).

❖ Q4: Participation:

- ◆ RBR has Need to improve access to information by rural communities in the K2C.

Note: Alternative energy sources need to be brought to the attention of government officials in the K2C. Refer to the Appendix for a summary of the exiting situation in RSA

❖ Q5: Vision / Mission & Q6: Management Plan

Rhön BR wants to revisit & review their management framework, whereas K2C needs to come up with a strategic plan that will bring about an inclusive long-term vision & mission and a comprehensive Management /

Group 2's feedback on day 3:

❖ Q14 & 16: Renewable energy

- ◆ RBR: Solar & wood chips / pellets (replacing fossil fuels with renewable energies)
- ◆ In the RBR wood is easily available & needs to be used – so wood chips / pellets are made from wood acquired from the forests & then fed into large incinerators, which produce energy (replacing in many areas the oil system; while in K2C wood is precious (natural woodlots) & use / collection needs to be discouraged & alternatives acquired.

Note: Possible solutions in the K2C:

- Use of sawdust, waste products and trimmings etc accumulated in the existing Forestry industry for making pellets.
- Implement the making of pellets / chips from problem plants cleared (alien invasive sp. e.g. wattle & indigenous encroaching sp. e.g. *Dichrostachys*).
- Investigate hydro-power.
- Start Limpopo based pressure group encourage production of own renewable energy & allow feeding into National Grid.

- ◆ RBR have established solar farms for local use & also permits feeding energy back national grid, for which financial compensation is received, while K2C is restricted in its ability to supply own electricity (for a variety of reasons) & no opportunities to feed into national grid.



Figure 11: Inspecting a Wood Chip Burner in Kaltensundheim.

❖ Q15: Private Sector involvement

- ◆ The Private Sector has been involved in establishing the Solar Farms – energy generated feeds into National grid, but self funded (investors & the bank).
- ◆ RBR relies on private sector funding to small extent, however, not heavily required due to extensive governmental funding (e.g. EU).

Note: K2C needs to involve private landowners – very NB (with regards to: support / resources / funding)

❖ Q21: SMME's

- ◆ Focus on the wood carving: exposure, market base etc
- ◆ More attention given to arts & crafts

[**Impressions:** There needs to be more creativity & ingenuity applied in the K2C – make use of the existing resources & skills]

Group 3's feedback on day 3 :

❖ Q1: University of Fulda Internship / Summer School

- ◆ 1.1 Summer school (Fulda University) offers (non-German) students a learning opportunity (theory & practical) in the field of sustainable development
- ◆ 1.2 **Admission:** Intermediate German language competency, at least 18yrs old, associated field of study & enrolled at a University

- Opportunity to achieve credits if there is a recognition agreement between the relevant institutions

- ◆ 1.3 **Enrolment fees:** Euros 2000
- ◆ 1.4 No bursaries but funding for program through grants

Note: Initially it was suggested that liaison take place between SAWC & Thomas Berger of Fulda, but subsequently the decision was made to also include Wits Rural Facility as WRF deals with tertiary education and is possibly more of the same level as Fulda. Initial contact has already been initiated.

- ◆ 1.5 **Target:** Students in the field of sustainable development

❖ **Q4: Research co-ordination**

- ◆ 4.1 It is important to know WHAT RBR's needs are, as identified by the Management framework (of the RBR).
- ◆ 4.2 The procedure in the RBR: Doris (or equivalent person in the respective Admin Unit) writes proposals for research topics, as well as a synopsis for each proposal, that she then places on the internet together with an invitation inviting interested researchers to make contact (Students use the RBR for fieldwork)
 - Contract between the RBR & student: RBR provides logistical support (such as office space) and can make use of the data accumulated and research findings.
- ◆ 4.3 Have an electronic library not a data base
 - Once a year RBR has a presentation session (15 min each) of research work, at which the best 8 (presentations) are chosen.

Note: As mentioned before considerable amount of research happening in the K2C region – the idea of a forum in which to present work in the BR region is good – good exposure of the work, good experience for researchers especially the younger ones & good to have the info in the region. Many organisations have been doing it internally (KNP, old TPA, ARC etc) – Needs revival! Perhaps every 2 years a symposium (most research projects run for at least 2 yrs).

Other:

- ◆ Research spectrum: Possible impacts of climate change on certain species; conservation issues; tourism & agriculture; marketing etc
- ◆ Initiative between Germany's 14 Biosphere Reserves to make BR specific research interesting / attractive.
Doris Porkony believes it is important to get own research budget in order to be able to influence / direct the research to make it useful for Biosphere Reserves.

Group 4's feedback on day 3 :

❖ **Q1: Relationships between different Government levels & Q2: Funding to sustain the BR**

- ◆ As per organogram of the RBR (in the appendix) the National Government & State government's roles clear
- ◆ Support, funding & policy framework is provided by the Governments (Policy e.g. at least 3% needs to be Core area)
- ◆ Reasonable amount of independence
- ◆ Government pays for renewable energy generated to be put into the National Grid +. Secure investment for 20 yrs
- ◆ In the Hessen Global Project there is partly opportunities for the local youth to participate in the sustainable development programme (although not the main target group)

❖ **Q4: Community driven projects**

- ◆ Community project – the Solar Farm

❖ **Q5: Contribution to National GDP**

- ◆ Contribute to the National GDP in terms of the energy generated.

6. Discussion

In just the 5 days of experiencing the Rhön BR and its associated initiatives, a huge impression was made on the K2C delegates. Individuals are from different sectors of the K2C region, and therefore different people were impressed by different presentations and site visits– depending on their background and field of expertise. However there were some impressionable aspects of the RBR that were common to the majority of the K2C participants – if not all of them. It is these points that will be discussed in this section.

Most impressive to everyone is that the Rhön BR has an **organisational structure**, which consists of 3 Administrative Units (one per a State). Although these units are reasonably independent there is co-operation between them. There are about 15 **full-time employees**, paid by the government (at different levels – depending on the State in which they fall). By having an umbrella organisation and full time employees, co-operation at all levels, continuity of projects and ideas (even if an individual was to leave), and government commitment to the processes and initiative/s, is ensured. There is accountability and responsibility required by all people involved.

At this stage **K2C has no organisational structure or any support funding**. K2C does have an EXCO of 5 / 6 people and a co-ordinator, but all people involved do so on a totally voluntary basis, with no remuneration received, and apart from stakeholder meetings, which LEDET has paid for, individuals have carried costs incurred. However this will change shortly, to a certain degree, as funding has been secured to build a nodal centre (BR office), and employ a co-ordinator for a limited period. LEDET had talked at one stage of providing some administrative remuneration but this never materialised. At no stage has Mpumalanga government shown commitment to the process.

There are also **3 Working Groups (tourism, labelling and internet)** in the **RBR**, that help to drive various key components of the BR, however these people are not employed by the RBR– most work for other institutions, although at meetings a RBR staff member is always present. The RBR organisational structure has been graphically depicted in the appendix.



A few years back **K2C had** a similar system in place, only these groups were called **Task Teams**, but without being able to secure funding for administration and pilot projects, the teams fell by the wayside.

Figure 12: An example of the Rhön Biosphere Branding and signage used outside establishments committed to the RBR ethic.

What K2C BR needs to investigate / consider:

- ◆ That the K2C administration acts as an umbrella organisation – not seated in a government structure but supported (in interest and some funding) by Mpumalanga, Limpopo and National Government levels – Private Public Partnership perhaps.
- ◆ This K2C BR entity will need to be respected and trusted by the government structure/s but even more importantly the private sector. The organisation needs to be accountable & responsible to both the government and the private sector.
- ◆ K2C needs to “Africanize” the many biosphere concepts to relate to the local dynamics.
- ◆ Preparation of proposals to try and secure funding for pilot projects.
- ◆ Submission of proposals to wide number of agencies and organisations so that these projects can be funded under the BR banner.
- ◆ Look at partially generating some own management funds – to ensure certain amount of independence.

Equally impressive has been the **support funding** that many of the projects in the Rhön have been able to access. Most often this has been through the **European Union** or divisions there of. Unfortunately to date K2C has not been able to secure funding such as this. Recently there has been renewed energy & commitment amongst the K2C members (definitely supported by this exchange program), and hopefully this will result in increased support in funding and implementation.

Another aspect that everyone found very inspiring was the **collaboration amongst stakeholders in the Rhön**, the unity was clearly evident in a number of initiatives e.g. “From the Rhön for the Rhön”. Frequently **individuals in the RBR have been creative** and ingenious in initiating and implement their own ideas. They have not waited for the RBR (or anyone else) to lead them. This **unity** is sorely **lacking** in many areas of the **K2C**. Something that should also be noted (as learnt from the RBR) is that the K2C should not try to get everybody on board all at once but rather focus on already committed groups until success is attained and then re-focus onto the next group etc until the larger goal is achieved.

What K2C BR needs to investigate / consider:

- ◆ Initiating a few small pilot projects, to serve as real life examples of what can be done, and with which to tempt other operators to link up or get involved in one way or another.
- ◆ Perhaps run competitions of some sort (as did different stakeholders in the Rhön) for example a competition between the various restaurants and lodges in the BR for the best local cuisine. This will not only promote the BR as a region but also promote the creation of local food products using local ingredients. (Although there is the “Bush Banquet” Initiative in the Lowveld Region of the K2C, which does embrace this competition concept in an exceptional manner. However there is considerable room for expansion of the concept to include all areas and principles of the K2C Region.

The **RBR has a Management plan in place** for the whole area. It is in the form of a book. RBR is in the process of updating and revising the document. It provides goals and visions for each land use type. It considers the zonation and the value of each zone to the Rhön landscape as whole etc.

K2C does not yet have a holistic Management Plan in place, although the formal protected areas (the core areas) and most of the privately owned conservation land (buffer zone) do have them. LEDET have identified the need for such a document and have put out tenders twice, but not appointed someone to compile it as of yet, due to internal issues. They are expected to re-tender shortly.

What K2C BR needs to investigate / consider:

- ◆ Mpumalanga's involvement in the process of tendering / outsourcing of the Management / Master Plan (Why should LEDET alone, have to fund this process).
- ◆ That the framework in which the Plan is developed is appropriate to the K2C / South African situation.
- ◆ That it is a participatory process.

The **RBR has a number of information centres** in the region. These centres are used for environmental education mainly but also serve an important function of creating awareness about the RBR, the BR concept and activities and, or personalities associated with the Biosphere Reserve. The Bavaria info centre has a permanent exhibition, changing exhibitions (for example on art work and nature conservation issues), and an interactive component where visitors can look through microscopes or have a touch screen, provide lectures and presentations, including the screening of pertinent films.

In the **K2C region most of the protected areas have Info Centres** – for example at Letaba in the KNP and Bourke's Luck Potholes in the Blyde River Canyon Nature Reserve / National Park. However **none** of these centres **feature the Biosphere Reserve concept**. There is room to expand and improve on the existing information centres in the K2C region. The idea is to include the creation of an information centre in the development of the K2C Nodal Centre (in Hoedspruit) as funding for the Nodal centre has already been sourced.

What K2C BR needs to investigate / consider:

- ◆ Expanding existing Information Centres (in particular: Bourke's Luck Potholes, Swadini & Lillydale) to incorporate the BR concepts, promote the K2C and become interactive dynamic centres. K2C should possibly look at establishing a task team to look into this aspect
- ◆ Preparation proposals for expansion of these Info Centres.
- ◆ Be guided / inspired by existing Centres in South Africa such as the Cradle of mankind in Gauteng and the MTN Science Centre in the Western Cape.
- ◆ Once funding has been secured – out source to professionals in the field to develop the centres according to the required guidelines.

The **RBR considers Environmental Education an important function** of a BR, although in some cases (for example in the Bavaria Administrative Unit) it is out sourced. EE includes people from all ages, ranging from children in kindergarten to adults. However, the focus is on the youth and most of the participants are in grade school. The education products that are offered target the local community and are linked to the school curricula. Programmes are fun, interactive and teach children (often inadvertently) about sustainable development and the biosphere reserve concept.

The **K2C also considers EE imperative**, and **most protected areas have EE programs**. There are also a few other EE programs, but most are government linked.

What K2C BR needs to investigate / consider:

- ◆ Existing EE programs incorporating the Biosphere Reserve Concept.
- ◆ EE / awareness programs especially pertaining to BR also be adapted to reach different target markets including adults and certain sectors such as different government structures.
- ◆ Women's groups / other 'vulnerable' groups involved in projects that develop educational aids that can also be bought as "tourism" products such as the Cased caddis as indicators of good quality water or the Mopani Moth puppet that goes through metamorphosis: from egg – worm – pupa – moth.
- ◆ EE institutions / bodies providing creative and adaptive programs, of relevance to the region and its people for example something incorporating the Traditional Healer / Herbalists' use of plants into a program, e.g. developing a medicinal plant nursery where people are taught how to make certain types of medicine (ointments and teas) and can also buy the plants at the same time.

Research is ongoing in the RBR. Although the RBR does not fund the research activities, it may help with small support funds, logistics and guiding principle pertaining to BR.

In the **K2C there is significant amount of research** taking place within the region. The topics vary considerably from HIV / AIDS research to elephant behaviour. Frequently this work happens in isolation and doesn't receive the exposure it deserves. For a long time now K2C people have wanted to establish a Research Data Base, to be housed in the K2C nodal centre, so that it is readily accessible and the information can be applied in the region.

What K2C BR needs to investigate / consider:

- ◆ Re-visit the Research Data Base concept and collaborate with organisations such as SAEON who have expressed interest.
- ◆ Aiming for registration of all research projects at the K2C office (so that K2C is aware of what is going on, but so can also link people and organisations to each other etc.)
- ◆ Consider having a symposium every 2 years of current research projects. Similar to the RBR – and have a special prize for the best / most valuable / whatever.

As previously mentioned **tourism is a major activity in both** the Rhön and Kruger to Canyons Regions. What was particularly interesting to the K2C delegation was the fact that in the Bavaria State, anybody could access private property, provided they stuck to designated trails etc. Once again there has been collaboration between landowners in establishing biking and hiking trails across the properties.

What K2C BR needs to investigate / consider:

- ◆ A multi faceted - guided, wilderness trail across a number of unused sections of private and state owned land.
- ◆ Expanding tourism products – provided the ecological integrity is not compromised- look at other different activities such as orienteering (outdoor adventure type activity in which teams / individuals have to race to reach specific locations, which are either given to them as GPS co-ordinates or points on a map).
- ◆ Developing / expanding the agro-tourism products – such as mango / citrus picking and other value adding products.
- ◆ Encouraging Lodges / restaurants to come up with recipes unique to the region using local products.
- ◆ Start small with the identified grading project – get a few stakeholders involved to develop criteria and then expand, as other tourism operators want to get involved. (The idea is to establish a grading system that is similar to the star ratings given to establishments in the accommodation industry, but a system that incorporates the principles of a Biosphere Reserve and one that is based on sustainable development and other criteria that are important in the K2C. It may encompass other existing rating systems. It is intended that this grading system can help visitors make an informed choice on the tourism product in which they hope to participate for example is the Game lodge REALLY an eco-tourism destination i.e. it meets the international criteria set for eco-tourism as well as any K2C specifics, and is NOT just a lodge using the concept as a marketing ploy, and does not comply with any of the criteria which make it a true eco-tourism destination).
- ◆ Consider the Fair Trade in Tourism in SA organisation – is it applicable to what K2C is trying to achieve?

The **Renewable energy generated in the Rhön** was another of the very impressive features experienced during the exchange visit. The initiative of supplying energy to the national grid and being paid for it is considered to be very innovative, a model the K2C would dearly like to replicate. **The K2C is generating VERY limited amounts of renewable energy**, for example many lodges have solar panels for lighting, but otherwise there is a huge amount of scope to expand this all-important manner of practising sustainable development.

The Rhön BR has existed for about 16 years now (about 10yrs longer than K2C), therefore K2C members should not get too despondent about the (slow) progress that this Initiative is having. Remember: ***“Sustainable Development requires courage, a pioneering spirit and sacrifices!”***

What K2C BR needs to investigate / consider:

- ◆ National Government to provide a Policy for supplying energy into the National Grid. Refer to appendix for the status quo in SA.
- ◆ Existing infrastructure that with minimal resources / effort could be adapted to generate renewable energy.
- ◆ Start small and expand.
- ◆ Consider the most viable options in the K2C region.
- ◆ Look at possibilities of K2C generating an income out of production of renewable energy – even if marginal.
- ◆ Work shopping the concept/s with relevant stakeholders.



Figure 13: A visit to the Solar Energy Farm – a wonderful example of the co-operation between community members as well as the provision of significant amounts of renewable energy.

7. Key impressions

The following key impressions are those that arose while the K2C group were in the Rhön. The lessons learnt and what will be taken back to the K2C Region were presented to the Rhön guests, presenters and organisers on the Friday night.

7.1. Lessons learnt from the exchange visit:

1. High level of self-employment reliance.
 - Many small family businesses
 - Networking between small businesses contributes greatly to their success and sustainability.
2. Strong focus on willing and pioneering participants while at the same time also reaching out to those who are not yet well informed about the biosphere and/ or participating fully.
3. K2C needs a management plan / framework which is linked to planning tools of government in general and particular local government.
4. Development and implementation of the management framework should be based on a participatory approach where all relevant stakeholders are given the opportunity to contribute / provide their inputs.
5. The biosphere principles have become a way of life in a number of areas within the RBR as demonstrated in various villages and amongst many of the communities in the Rhön.
6. Participating stakeholders are encouraged to engage in sustainable activities.
7. The BR does not only focus on environmental aspects but also on cultural history. The focus on cultural history adds to the creative story behind each product and contributes to regional unity and pride.
8. Biosphere administration office is imperative for successful functioning of the biosphere.
9. Development and distribution of marketing material is imperative for stakeholder participation and the creation of a common regional brand.
10. Branding key to the creation of regional pride and promoting the area.

7.2. Things to take back to K2C

1. K2C should appear in the districts IDP
2. Create a visitors centre to send a strong positive message.
3. Well structured biosphere committee with focus groups, each focusing on a specific area / specialty and with clear KPI's

8. Wish lists

Each participant from the Kruger to Canyons delegation was required to compile a wish list based on policies / projects that they would particularly like to see established in the K2C region (or South Africa generally). These lists are "off the cuff" ideas that have not been worked as of yet. Most of the points are not in any particular order and no format was set so that participants had room for creativity. The ideas fall within the concept of sustainable development associated with MaB principles.

Jenny

1. **Policy** - paid for contributing **renewable energy to grid** - or something along those lines.
2. **A K2C Management / Master Plan** in place.
3. Areas to be rehabilitated - such as Phalaborwa mines - rehab with indigenous plants - herbaceous level and establish **solar farm**, and maybe even **something in between** - goat grazing / low level crop / ? something to **totally maximize that space** that has been damaged already.
4. Establish **organic farm** of some sort in the region preferably **water wise** and possibly perma-culture / mixed crops **as opposed to mono-culture**. Start with a smaller pilot project and grow as it becomes more effective - also preferably in land already been transformed.
5. Look at getting Belvedere power station working again - Eskom have expressed an interest a while back to use it (museum / training etc - why not some supplementary hydro power???) - The problem is that the levels of the Blyde are too erratic to provide continuous hydro powered - but perhaps the system could be refined to be re-established.
6. **Co-operative K2C wilderness guided trail** through Kruger 1 night - APNR 1 night - Mariepskop to Hippo valley 1 night - 2 nights along the Tshwateng / Steenveld / private farms and then to Lekgalametse 1 night - not just walking - although mainly (maybe mountain biking or horse riding as well), make use of existing accommodation along route - rustic not luxury.
7. "Low pressure" (similar to the hydro station seen in Rhön) **hydro electricity** generated from water channeled below (Blyde) dam wall - impact already done - it would just mean establishing infrastructure to channel the water briefly to capture the energy - I'm sure not too much of an issue - worth looking into.
8. **Grading systems in place:** especially for tourism and agric
9. Awareness program to raise profile of K2C especially in the tourism sector
10. **Bionade partnership** with products such as Marula - 1st because organic - perhaps later with mango and grapefruit
11. **Upgrade Swadini & Bourke's luck visitor centres** to become interactive, informative, dynamic, creative, interpretive etc, K2C information centers - still for Blyde but not limited to this only. They should not just be boring info centres with a K2C "office" but also almost become attractions of their own.

Marie – Tinka

1. **Stakeholder Council** properly constituted & functioning
2. **Management Framework** in place
3. **Implementation:** HR Component employed; Work Plans in place

4. **K2C Centre & satellites** functioning
5. **Tourism Association** affiliated
6. **Marketing** Campaign executed
 - Labelling
7. K2C Biosphere **Education Programme** for workshops written and aimed at specific target groups
8. **EIA inputs organized**
9. **Demonstration Projects:**
 - Organic Farming
 - Renewable Energy

Remember

1. Development of K2C BR core **management plan**.
2. Establishment of **K2C BR centre**, i.e. Office space, info centre, library, stalls, etc.
3. Appointment of **staff members**, viz: Co-ordinator, tourism officer, environmental educator and admin support officer.
4. **Maruleng Municipality** to be the **admin authority** of the BR.
5. The **two Provinces** should each make a **35% grant** to the host municipality for the administration of the BR.
6. The **Municipalities** should share the **other 30% with interest** in running the K2C BR.
7. Inclusion of **LED managers** from the participating municipalities **in the EXCO** of the BR.
8. The **stakeholder council** should be **sector based**, e.g. each member from Agric, Tourism, NGO, etc.
9. Participating municipalities should strive to include **K2C BR** in their **IDP's as an LED** project that will ensure sustainable development in their area of jurisdiction.

Debby

Not in priority order, but just taken directly from notes made throughout the week.

1. Establish **cycling and hiking tracks across the farms**, specifically those along the Blyde River and against the escarpment
2. Establish **Mango/ Citrus trail** on the farms including visits to pack-houses, and production sites for value adding aspects (e.g. juicing factory/ drying sheds etc)
3. Volunteer guides, who are currently **un-employed can be trained as general guides** to ride/ walk with clients and work on a tips basis.
4. Look at **developing** and highlighting definitive areas for **extreme adventures** such as paragliding, rock climbing etc
5. **Master Plan**, including Management Framework, communications plan, marketing plan etc to be developed
6. Establish definitive **partnerships with both Limpopo and Mpumalanga** and establish areas of partnership and cooperation.
7. Facilitate **joint projects** between both provinces within the region.
8. Project initiated to start **educating residents on importance of "landscape conservation"** as opposed to just individual species conservation as many of our complete landscapes are being destroyed through inadvertent activities

9. A **“from the region, for the region” project** to be initiated to encourage local lodges, restaurants and shops to support local producers/ farmers/ and suppliers
10. A **BEE company** initiated that involves a central office/ location point that will facilitate and coordinate the supply of local products to restaurants/ lodges etc, possibly done in conjunction with one of the larger supply businesses in town to benefit from their current facilities (e.g. delivery vehicles, office equipment etc)
11. Establish a **Biosphere Nodal Centre/ Administration unit** in which all functions of the Biosphere can be facilitated and coordinated. In addition to this a wide range of additional regional information will be available to the visitor and resident within the region.
12. **Outsource EE** within the Biosphere context to a relevant organization
13. Task selected organization to draw up **comprehensive EE programmes** for varying age requirements
14. Establish single **label/ sign for all establishments** to bear at their entrances, on the produce boxes etc “e.g., proud partnership with....”
15. Establish a system of **committed membership** within the region, decide on and outline requirements of various stakeholders to commit to membership within the biosphere
16. Establish a **grading system for different sectors** within the region based on currently existing certification requirements (e.g. for Responsible Tourism, agricultural practices, mining practices, business practices, restaurants support of local products etc)
17. **Marketing** of the grading system as well as marketing of the businesses that comply with the grading requirements.
18. Establish a **BEE partnership with an experienced restaurateur** to establish a small coffee shop/ restaurant at the K2C Nodal Centre that will specialize in selling products obtained locally and will act as a demonstration project for the “from the region for the region” project. Additionally, it can possibly act as a training school for potential chefs/ waitrons wanting to gain experience to enter the hospitality industry
19. Investigate **further biological control measures for pests** and diseases in the region
20. Establish **students exchange programme for research or development** projects with Fulda University as well as possibly shorter programmes for educational exchange with a Rhön based secondary school
21. **Engage in energy efficiency awareness programmes** within the greater region to reduce the current amount of energy used.
22. Possibly do direct research on households use in the larger towns and respond with suggestions of cutting down energy use.
23. **Renewable energy created through community development** projects and allowed to be fed into the national grid (wind or solar – hydro more than likely not possibly in most regions apart from those alongside the Olifants/ Letaba or Sabie Rivers)
24. Initiate community based enquiries into **renewable energy policies** within national government
25. Use **rehabilitated mines** or other already degraded areas for the establishment of **wind or solar farms**, or hydro power in areas along the Blyde and Olifants rivers.

26. Establish area as an **organic farm region** (possibly through 2 phase process, first looking at bio-dynamic agriculture then following through to organic agriculture)
27. Produce **organic value added products** such as baby-food within the region (marketed specifically as organic K2C product)
28. Investigate potential development of a **"Bionade" production site** in the region, looking at Marula flavour initially and following through with Mango and citrus (once enough organic fruit is produced). Alternatively, investigate the option of exporting fruit pulp to Bionade in Ostheim for the above flavor productions and re-import products back into the region.



Figure 14: Visit to Bionade Brewery

29. Establish a **municipal level competition** to run over a suitable length of time (e.g. 4 years) to allow for interactive projects to be included in IDP, budgeted for and implemented. The project can be run on a provincial basis – i.e. between all the relevant municipalities within each of the Limpopo biospheres (i.e. K2C, Waterberg and Vhembe) with the inclusion of the K2C municipalities that fall within Mpumalanga. The competition will be based on the municipality that best encourages, employs and adheres to biosphere principles.

Lesiba

OBSERVATIONS:

1. There are 3 regional governments into whose territories The Rhön Biosphere runs, but they are all involved in terms of providing administrative support to the running and coordination of the MaB Programme
2. A Biosphere office with all the necessary equipment assists the coordination of the programme
3. Biosphere administrators and coordinators are paid by government
4. Common branding for the region has led to good successful marketing
5. Rhone products are well promoted
6. Environmental education programmes are not government responsibility only but they get outsourced
7. Residents of the region are compensated for engaging in environment friendly activities

8. While more effort is put on the willing participants, more is still done to raise awareness on the importance of MaB and the concept itself.
9. Management framework has been put in place although it cannot be enforced due to it not being a binding tool
10. Model villages for MaB demonstration project identified
11. Municipal competitions held on how best they are implementing MaB principles and approaches in their planning
12. Well structured and representative management committee with more focused task teams

ACTIVITIES TO HAPPEN

1. The two provinces – **Limpopo and Mpumalanga** – including municipalities **should meet** and clearly outline how they plan to feature in the administration of K2C
2. The **two provinces should dedicate one official each** with the intention of providing support to K2C in case provincial government is required. This should be an added function of the said official
3. The **municipalities should include K2C in their IDP's** and **budget** for biosphere demonstration projects in the villages
4. **A management plan/ master plan** which is linked to state organs planning tools and processes and therefore binding, needs to be developed
5. Proper and **common branding of K2C** region is needed
6. All institution, private and public, need to have **signage** on entrances **expressing membership of K2C** and adherence to sustainable development principles.
7. There should be proper and **regulated signage** in the region
8. **K2C coordinator to be appointed**
9. There should be **K2C offices**, well equipped and with administrative clerk
10. **Research in the region** should be properly **coordinated** and academic institutions should be used
11. **Local products should be promoted**
12. **K2C promotional material** should be developed, distributed and made accessible by the general public at places of mass gatherings
13. There should be **exchange programmes with biospheres in Limpopo** province
14. **K2C should be part of municipal tourism plans.**

Mike

1. **Financing of the project** in a long-term sustainable way, which to my mind would need to include our Governmental Org. Municipalities being the obvious in their LED and IDP programmes. This could take time (next budgets) and also persuasion and acceptance.
2. **Management** on a permanent basis.
3. Keep and **strengthen the relationship with the external parties** involved (Rhön, GTZ, etc.)

Maryna

1. Obtain **confirmed commitment from provincial government** (both Limpopo and Mpumalanga) and clearly outline commitment and involvement
2. Obtain **confirmed set budget** for K2C
3. Establish a **pilot solar energy project** within the K2C region

4. Obtain **commitment/ funds** from DEAT (Dept of Environmental Affairs & Tourism).

Michelle

1. Administration

- To find a **'house'** for the K2C within the administration of the two provinces that fully supports the activities of the K2C, not only with words but also budget.
- To establish an administrative **office with its own budget** and that is easily accessible by the public.
-

2. Environmental education

- **Information centre in each province** that doubles up as the centre from where environmental education for all age groups is provided.
- Environmental education that **utilized indigenous knowledge** as was done in the Rhön e.g. bread baking, herb garden and making of ointments.
- Environmental education is done by an **outside entity** and not the administration of K2C
- **Wildlife College sends students to game / nature reserves** within the Limpopo and Mpumalanga Provinces for practical experience. Especially community owned reserves e.g. Botshabelo (only an example) where they will be able to not only gain practical experience but also share their knowledge with other young people and maybe even inspire them to follow the same route.
- Establish a **volunteer service** where interested people can participate in providing environmental education

3. Branding

- **K2C** registered as **brand**
- **K2C standards of quality** developed
- At least two **hiking trails** established in the K2C that include both private and state land in the route and that markets the product under the K2C logo – this links to the idea of using pilot projects to 'soften' people up to the possibilities that K2C present to them and the benefits they can gain.
- **Local producers see the benefits of using the K2C logo** on their products (ever thought of involving Woolworths – e.g. an organic range of products sold in Woolworths under an environmentally conscious K2C brand. *...products only found in K2C...*Woolworth has recently been marketing themselves as environmentally conscious by putting measures in place to reduce their carbon footprint, the Kruger National Park is very famous, so is Blyde – put all of this together and with a bit of innovation this can be interesting – if Woolworths gives recognition to the K2C standard of quality the rest of the country will follow).

4. Research

- To have a **yearly budget available for research** projects that will be to the benefit of the K2C
- To have a system that makes the results of **the research easily accessible** to anybody who is interested.

Canzi

My wish list for the biosphere is a solar **alternative energy plant**, which will ensure sustainability of all areas within the biosphere. This is due to the fact that electricity stoppages will be a feature of this country for some time. Therefore, it is important to implement a project, which has sustainability for the lodges and B & Bs in the tourist areas within the K2C biosphere.

Solly

1. Establishment of **multicultural village and Art & Craft theatre** within the Biosphere Region (Inclusive of all the cultures (ALL) K2C Biosphere for Tourism growth.
2. **Stakeholder participation** "imbizo" for broad **buy in** / participation in the Biosphere.
3. **Special interest group meetings** (Protected Areas and Private investors).
4. **Community workshops** deliberating **on the Biosphere** and its importance. (Bush Buck Ridge and Maruleng Municipalities)

Mirjam

1. I liked the idea to have **decentralized information/visitor centres** that give out positive messages on what can be done in the Biosphere Reserve. From this point you can try to guide visitors and have good visitors management and not by giving out negative messages and restrictions only.
2. To have some successful **pilot projects** with innovative people and entrepreneurs as a starting point. These pilots can then be marketed or expanded from this point onwards and lessons learned can be disseminated and others will automatically follow.
3. To bring more history, culture, geology, pride, etc. in **the management framework** and other info material from the Biosphere Reserve (e.g. Environmental Education materials and marketing of regional and local products).
4. Look further into the issue of **renewable energy** and start a pilot project if feasible and wished.
5. Look further into the **Bionade story and develop** K2C drinks if feasible and wished. As Bionade is an organic soft drink this could also introduce more organic produce into the Biosphere Reserve.
6. I still think that we can learn more from the Rhön on the **land reform process** that took place. We had very little time on this in Thuringen and I think it would be nice to see in more detail how they continued farming in

this re-privatisation process. This can give us ideas on how to continue good farming during the land reform process and handing over phase in South Africa.

7. I wish a **'greening' project in Bushbuckridge** municipality.
8. A **list of urgent and priority research questions/problems** that the EXCO of the K2C Biosphere Reserve wants to have answered.



Figure 15: A visit to the previous East German Border Point and learning about the Iron Curtain.

9. Expected Outputs

Some preliminary outputs (as a result of the imminent exchange program) were identified – these have been re-visited since the K2C delegation's visit to the Rhön, and appear as follows:

- ◆ **Present the way forward** (as identified in this document) to the different levels Government and the K2C Stakeholder Council.
- ◆ As a result of the exchange visit to the RBR it is expected (and already experienced to a certain degree) **that an integrated and common focus for the K2C Biosphere Region** will be achieved. This will also help to **motivate** the management team towards achieving the goals of the K2C Biosphere Region.
- ◆ **Motivation to raise the profile of the Kruger to Canyons Biosphere Region.** This is not just from the perspective of the EXCO and management team of the K2C but also at Provincial and National Government levels.
- ◆ Compile a **“tool kit” or a process** to address issues raised from this exchange project. This has National and provincial Implications – and requires the commitment & participation of these levels of government from the Ministry of Environmental Affairs - it should not fall on the shoulders of the current EXCO. This also links with compilation of the Master (Management) plan, which requires the formulation of an action plan. This “toolkit” item will be partially addressed in this document in section 10. Way forward, of which the Master / Management Plan is only one step of the process.
- ◆ **A visit by the Rhön Biosphere Reserve Delegation** to the Kruger to Canyons Region. The intention behind this visit will be mainly to further discussions initiated and concepts learnt while the K2C Delegations were in the RBR. It is expected that there will be more **emphasis on the RBR sharing their expertise** (in specific areas such as renewable energy) to a broader stakeholder group (as opposed to just the few K2C delegation members) in the K2C Region, than on the RBR visitors seeing the region. It is hoped that there may even be the opportunity to enter into potential partnerships during this visit. It is envisioned that this visit by the RBR will take place towards the end of 2007.
- ◆ Identification of some **SMME's** and the **implementation** of these. The K2C EXCO could be responsible for identification of these enterprises in the meantime. Preliminary lists of projects have been identified in the past – these could be revisited with regards to SMME principles.
- ◆ **Establish Partnerships** at different levels and between different entities whether local or international – not only with organisations / companies in the Rhön.
- ◆ **Biodiversity Day** to be held in 2008 to help raise the awareness of the value of the biodiversity within this (K2C) region.
- ◆ **Foster long-term management** of the K2C BR. While all the protected areas in the K2C core & buffer zones have Management plans in place – a holistic management plan framework and actual plan for the Kruger to Canyon Biosphere Region does not yet exist. LEDET Have been attempting to address this issue and have put the project out to tender twice, but have not yet appointed anyone to compile such a document. LEDET intends to re-tender for this project – perhaps this exchange program will spur on the process. Mpumalanga Province should also be in the tendering of this project.

10. Way forward

This section proposes to communicate the way forward for the Kruger to Canyon Biosphere Region. It has been assembled by assessing the different “wishes” formulated by the delegation members in their wish lists mentioned in section 8. The ten most common “wishes” were noted and then compiled into a proposed strategy that has been expressed graphically in a flow chart. Despite a few people having quite a few more than 10 items on their list, it was more-or-less possible to encompass every single one of the items listed on all the wish list received. The proposed strategy for the way forward has then been further explained in table 2, under the following criteria: the current situation, the needs to achieve that particular component of the strategy, the expected final “product/s”, the broad time frame in which it is hoped it can be achieved, the people who should be involved or help to co-ordinate the process and finally the priority of that particular component.

It is important to understand that these are preliminary concepts and strategies, which may be refined, altered, added to or totally removed from the holistic picture, as they still need to be work-shopped amongst a greater stakeholder base, hopefully in the immediate future.

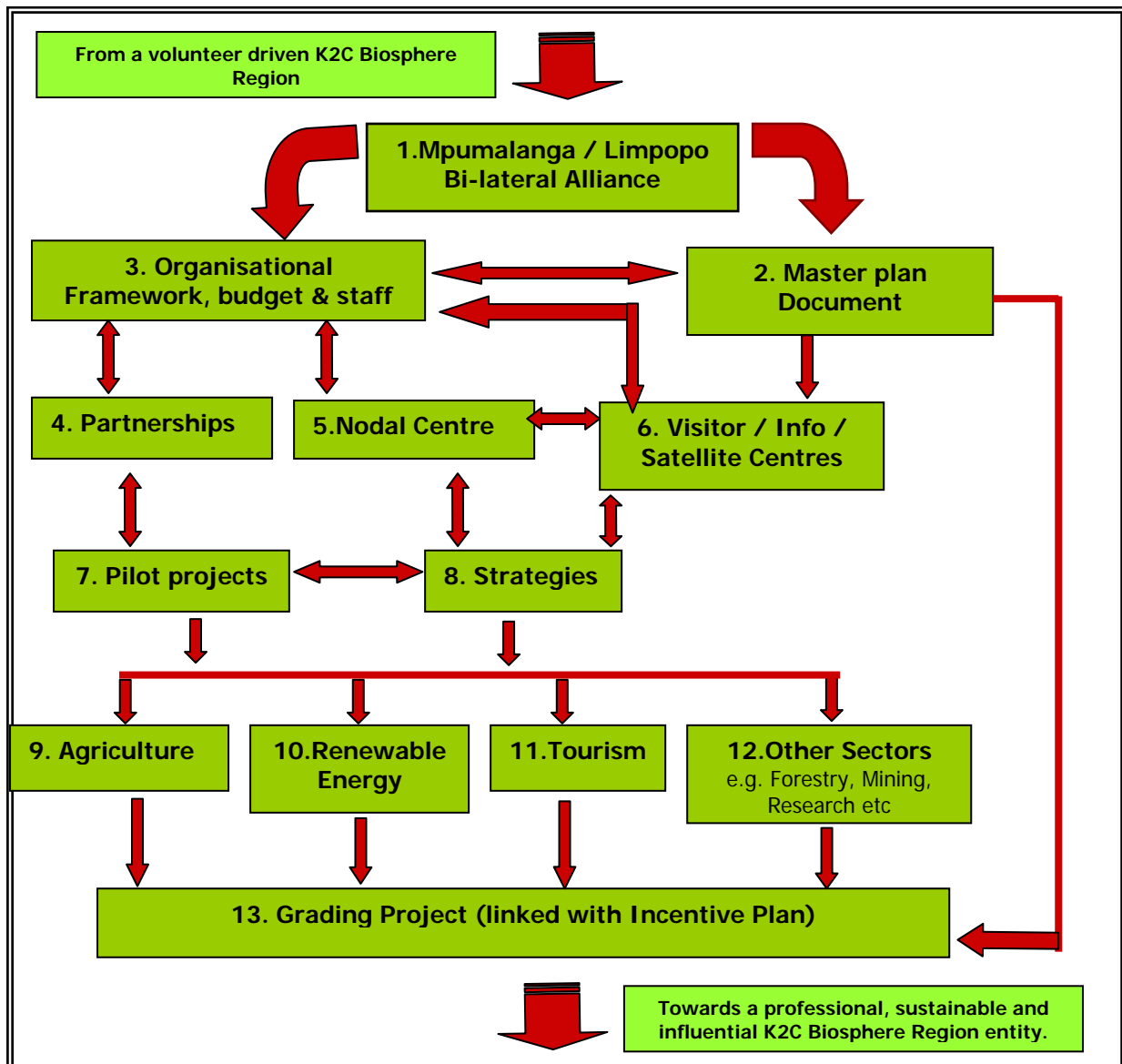


Figure 16: A proposed strategy for the way forward for the Kruger to Canyons Biosphere Region. The arrows indicate the existing or potential links between items.

Table 2: A detailed explanation / preliminary action plan of the flow chart in figure 16, the proposed strategy for the way forward. The priority rating is on a scale of 1- 5, where 1 = Urgent or very important and 5 = least important / not imperative in the immediate future.

Item on Flow Chart	Priority rating	Current situation	Needs in order to achieve item / goal	Responsible person / people	Proposed time frame	Final Products / Outputs
1. Mpumalanga / Limpopo Bi-lateral alliance	1	LEDET from the Limpopo Province has provided support to a certain degree to the K2C BR and the process leading up to nomination, but Mpumalanga Province (from a Governmental and higher-ranking levels) has not been involved in the process except from the former Mpumalanga Parks Board and now MTPA.	<ul style="list-style-type: none"> ▪ Meeting between the K2C EXCO, LEDET & Mpumalanga senior levels. ▪ Serious dialogue between the 2 provinces. 	<ul style="list-style-type: none"> ▪ Debby Thomson (K2C Co-ordinator) assisted by Lesiba Masiba of LEDET to co-ordinate a meeting between the appropriate people. 	By the middle of September 2007.	<ul style="list-style-type: none"> ▪ An alliance between the 2 provinces at a senior level. ▪ Commitment in terms of support, by both provinces to the K2C process. ▪ Provisional financial commitment to the K2C BR process.
2. Master plan document	2	As mentioned in previous sections of the document LEDET is shortly expected to put out the tender for the compilation of a master plan document for the K2C Biosphere Region. This will be a comprehensive and very inclusive document that can provide detailed guidance for the long-term management of the K2C BR.	<ul style="list-style-type: none"> ▪ LEDET put out the tender (for 3rd time). ▪ LEDET appoint an appropriate company to compile the document. 	<ul style="list-style-type: none"> ▪ LEDET Personnel at various levels and within different sections to put out tender and make appointment. ▪ Appointed company in consultation with the K2C EXCO to compile the doc. 	<ul style="list-style-type: none"> ▪ Tender put out by mid October 2007 ▪ Appointments made by the end of November 2007. ▪ Master plan doc. Completed by end of June 2008. 	<p>A Master plan Document that includes the following sub-documents/sections as per TOR:</p> <ul style="list-style-type: none"> ▪ Status quo / situational analysis ▪ Baseline info ▪ Training Package ▪ Communication Plan ▪ Marketing Plan ▪ Incentive Plan ▪ Integrated management plan
3. Organizational Framework, Budget & Staff	2	The K2C has explored a few organizational frameworks & combinations thereof - including having a Trust, a stakeholder council & an EXCO. However without ANY budget it has been VERY difficult to sustain the initiative. For the	<ul style="list-style-type: none"> ▪ An organizational framework needs to be established (a proposed / preliminary idea can be seen in the appendix). ▪ The framework needs to be acceptable to the 	<ul style="list-style-type: none"> ▪ K2C EXCO, LEDET & Mpumalanga Government Dept. (probably Dept. of Environmental Affairs) to compile an organizational framework 	<ul style="list-style-type: none"> ▪ By the end of September 2007 there should be a final organizational structure in place. ▪ By mid October 2007 there should be at least some written 	<ul style="list-style-type: none"> ▪ Organizational Framework in place ▪ Budget sourced for operation and at least 3 full-time employees of the K2C BR.

		<p>past 5 years the K2C has been driven by volunteers, which to say the least has had many challenges and has been very draining on personal energy and finances.</p> <p>While there is no final organizational framework in place, external funding has been sourced for the development of a nodal center and a salary for the coordinator for just 12 months.</p>	<p>private and governmental sectors.</p> <ul style="list-style-type: none"> ▪ An operational budget needs to be acquired (preferably through both provincial governments). ▪ There is a need for staff to be employed within the framework, even if there are a few people initially. 	<ul style="list-style-type: none"> ▪ K2C, LEDET & Mpumalanga to prepare an appropriate but comprehensive budget for the K2C BR. ▪ LEDET & Mpumalanga to identify where they can provide financial assistance. ▪ K2C EXCO to prepare proposals & / source the balance of the required budget. 	<p>agreement from the provinces with regards to some financial commitment for the future.</p> <ul style="list-style-type: none"> ▪ By January 2008 there should be a at least 2 people employed within the organizational framework 	
<p>4. Partnerships</p>	<p>3-5</p>	<p>As a result of the exchange visit there have been a few possible partnerships identified, e.g. one with Bionade. The family behind Bionade (non-alcoholic, organic & healthy drink that is brewed) is interested in establishing joint ventures or partnerships across the world – they already have 7 partnerships established or in the process there of.</p> <p>Partnerships can be in any form and could be small and local. They could comprise of more than 2 partners, each offering something different to the partnership, which creates</p>	<ul style="list-style-type: none"> ▪ Initially a preliminary list of potential partnerships that are in line with sustainable development and the MaB principles. ▪ Pursuing some of these possible partnerships. 	<ul style="list-style-type: none"> ▪ K2C EXCO could establish a preliminary list with contributions from the Stakeholder Council. ▪ The K2C / representatives of the Initiative could assist with bringing potential partners together for different ventures as well as providing some Biosphere principles. 	<p>This would be an ongoing & indefinite process – in terms of identifying & formulating partnerships, often not the responsibility of the K2C.</p> <p>Perhaps investigation of a possible partnership with Bionade and linking Bionade with potential partners in the K2C region could be done by Dec 2007.</p>	<ul style="list-style-type: none"> ▪ Variety of Partnerships that are committed to sustainable development and the MaB principles. ▪ Sharing of skills, knowledge, profits & resources (not always tangible). ▪ Job creation to different degrees depending on the type of partnership established.

		a beneficial relationship for all involved, in some way or another.				
5. Nodal Center	2	<p>It is envisioned that K2C have a nodal center / main administrative unit. External funds have been sourced to establish a nodal center – tourism office in Hoedspruit. It is expected that building will start by the end of 2007. It is envisioned that this also be the Center from which assorted data bases can be maintained e.g. a research data base of the region – for fields, ecological - anthropogenic (historic, present & proposed).</p> <p>Salaries have been sourced for 5 people (Co-ordinator, Tourism Officer, admin assistant, cleaner & gardener/maintenance person) for a period of up to 12 months after the completion of the building.</p>	<ul style="list-style-type: none"> ▪ Source long-term funding for the personnel. ▪ Items to arise in the future. 	The K2C EXCO in collaboration with Mpumalanga & Limpopo governments to source long-term funding.	Long-term funding to be sourced by June 2008.	A fully functional Kruger to Canyons Biosphere Nodal Center, from which the organization can be managed.
6. Visitor / Info / Satellite Centers	3-5	Quite a few people have expressed the need for visitor centers, environmental education centers and / or information centers that can assist in various ways of creating awareness about the features of the region, including the Biosphere concept.	<ul style="list-style-type: none"> ▪ Inventory of existing centers, their location and facilities etc. ▪ ID (in consultation with relevant bodies and interested & affected parties) which centers could be used for the proposed multi-disciplines. 	<ul style="list-style-type: none"> ▪ K2C EXCO, relevant authorities under whom the existing centers fall, selected task team members to be involved in the various steps – with different 	<ul style="list-style-type: none"> ▪ Inventory by end October 2007 ▪ ID centers by mid November 2007. ▪ Business plans, proposals & budgets by end Feb 2008. ▪ Hopefully funding sourced and 	<ul style="list-style-type: none"> ▪ Set of proposals, business plans & budgets for the upgrading of centers to become multi-disciplinary. ▪ At least 3 fully dynamic, interactive & informative centers that most importantly,

		<p>There are a number of existing visitor centers in the region, but most of these are within the conservation areas. Some of these are used for EE purposes, and some also require significant upgrading.</p> <p>It is envisioned that a few existing centers are investigated as multi-disciplinary centers: satellite offices for the K2C BR, EE, Tourism information & promoting the K2C and features of the region.</p>	<ul style="list-style-type: none"> ▪ A business plan / strategy established for each. ▪ Proposals prepared to upgrade the identified centers into dynamic, multi-discipline centers. ▪ Budgets prepared for these centers, including for staff. ▪ Proposals submitted to relevant people to source funding. 	<p>people tasked with different jobs. To be co-ordinated by K2C Co-ordinator initially & then tasked out.</p>	<p>upgrading could be completed by Dec 2008.</p> <p>[Obviously it is difficult to be prescriptive with regards to sourcing funding]</p>	<p>meet the needs of all the people in the region, & secondly the as needs of visiting national & international groups.</p>
7. Pilot Projects	3-5	<p>Quite a few people, both prior to, but especially as a result of the RBR visit have expressed the need for pilot projects that have a variety of objectives, which include: promoting / illustrating MaB principles, are ecologically & economically sustainable & responsible, build capacity in the vulnerable sectors of the greater K2C community and create employment opportunities for a variety of people (especially the poor rural communities). There are a number of potential projects e.g. organic farming, bio-fuels, craft development, value adding to existing agricultural products</p>	<ul style="list-style-type: none"> ▪ Compile a preliminary list of potential pilot projects. This could take into consideration the fairly extensive project list that was compiled in 2006. ▪ Prioritize the possible pilot projects. ▪ Identify people / organizations / groups interested in pursuing such a pilot project. <p>[Once again it is understood that this is an ongoing process]</p>	<p>K2C EXCO and relevant stakeholder groups.</p>	<p>List compiled by the end of 2007.</p> <p>2 Pilot projects operating by July 2008.</p>	<p>Pilot projects that are economically and ecologically sustainable, promoting the MaB principles. These will also directly / indirectly create employment opportunities and allow for skills development.</p>

		and even the generating of renewable energy.				
8. Strategies	3	<p>A number of different strategies have been identified and since the visit to the RBR many more ideas have arisen or been refined. The types of strategies that have been considered include a strategy for Environmental Education, as well as holding competitions for various reasons such as one amongst the municipalities to encourage “buy-in” to the Biosphere Concept. Another strategy could be to hold a mini-conference in which all (social / environmental) scientists operating in the region present on their research topic. A prize or prizes could be awarded for different categories e.g. project with most contribution to the K2C region etc. This could be held every 2 years and it would help scientists to expose their work and for the K2C community to learn about what is happening in their region.</p>	<ul style="list-style-type: none"> ▪ Compile a list of all needs for which strategies need to be compiled. ▪ Develop strategic plans for these identified needs. ▪ In the business plan / master plan one of the goals should be to evaluate the strategies on regular basis – for example every 6months, as well as identify any new ones. <p>[This is obviously an ongoing process, and needs will change over time. Some strategic plans will have a long life span depending on the type of requirements].</p>	<p>K2C EXCO & members of the stakeholder council to come up with a preliminary list of immediate needs.</p> <p>Certain people / groups tasked to compile the strategic plan for a specific need.</p>	Preliminary list by the end of 2007.	A variety of strategic plans in place that address the needs of the K2C organization and the needs of the people of the K2C region.
9. Agriculture	3 - 5	<p>Agriculture, in the K2C Region, as previously mentioned is a main economic driver. This item will link extensively with items 4, 7, 11, & 13.</p> <p>It would involve projects like</p>	<p>Although this is an ongoing process a preliminary need might include a needs analysis of this sector.</p> <p>The outcomes can then</p>	<p>K2C EXCO (co-ordinated by the K2C Co-ordinator) in consultation with representatives of the Agricultural Sector.</p>	Needs analysis by end of November 2007.	<p>Agriculture Needs Analysis Doc.</p> <p>Possible agriculturally based partnerships & / pilot projects implemented.</p>

		<p>pilot agricultural projects and the establishment of</p>	<p>be prioritized.</p>	<p>K2C EXCO & agriculture task team members could be involved in trying to link appropriate groups to form a partnership.</p>		
<p>10. Renewable Energy</p>	<p>2-3</p>	<p>South Africa uses predominantly coal generated electricity, & despite recent delivery issues & high demand on the national grid, electricity is still relatively cheap which of course does not put the required pressure on the public to conserve power.</p> <p>Currently there is limited use of renewable energy in the K2C region. It is mainly limited to small scale solar for amenities such as lighting, and windmills for the running of some water pumps.</p> <p>The visit to the RBR, and in particular the different renewable energy sites made a very big and positive impression on the K2C delegates. Nearly everyone would like this item to be investigated further, with investigation into the possibility of establishing a renewable energy plant/s.</p>	<ul style="list-style-type: none"> ▪ Study on the current South African situation with regards to renewable energy. – Already completed – see appendix in this document. ▪ Meeting with National DEAT & Mineral & energy Dept. Establish the SA commitment towards renewable energy plants, especially since the recent G8 meeting. ▪ Investigate the different potential types of renewable energy that could be generated within the K2C region – a detailed inventory prepared. ▪ Public opinion survey ▪ Feasibility studies. ▪ Establishment of partnerships / joint ventures ▪ Preparation of proposals for the development of renewable energy plants 	<p>K2C EXCO (Co-ordinated by Debby Thomson) in consultation with the appropriate external organizations 7 the appropriate K2C stakeholder representatives.</p>	<ul style="list-style-type: none"> ▪ Aim for a meeting with national government departments before the end of 2007. ▪ Inventory of the potential sites & types of renewable energy that could be used in the K2C region by end of January 2008. ▪ The rest would have time frames set as progress is made. 	<ul style="list-style-type: none"> ▪ Meeting with relevant National Depts. Should provide a good background. ▪ Comprehensive inventory of the potential sites & types of renewable energy that could be used in the K2C region

		<p>It is expected that there will need to be a link with the national departments of Environmental Affairs, & Mineral & Energy.</p> <p>There is the likelihood that there can be a link with item 7 – Pilot projects.</p> <p>There may even be the possibility of the K2C actually being able to generate a certain amount of income from such an initiative.</p>	<p>IF a viable option for the region.</p> <p>[Note this is obviously very simplified, and it should also be understood that this might not necessarily be the order of flow].</p>			
11. Tourism	2	<p>Tourism is another of the main economic drivers in the K2C Region, this is mainly nature based in the form of lodges and game viewing in the formal and private conservation areas. Many people have identified different tourism related ideas both prior to and as a result of the exchange visit. There are a variety of ideas & concepts pertaining to tourism in the region that need to be explored. This item will link extensively with items 4, 7, 13 as well as 9.</p>	<ul style="list-style-type: none"> ▪ Establish a status quo / situational analysis / inventory of tourism operations of the region including the capacity e.g. # of beds, the main type e.g. adventure / cultural tourism etc. ▪ Compile an extensive list of possible tourism products that could be developed to expand the region's tourism product as a whole ▪ Conduct market research on the needs of the visitors. ▪ Source funding to conduct the necessary research. ▪ Prepare a 	<p>K2C EXCO where possible, in conjunction with volunteer members from the stakeholder council.</p> <p>Consultants where money is sourced.</p>	To be devised by K2C EXCO.	<p>A thorough understanding of the tourism situation in the K2C region, and a strategic plan in place towards maximizing the tourism potential in the region without compromising the integrity of the natural and social resources on which the tourism industry is based.</p>

			<p>comprehensive Tourism Sector Plan for the K2C region.</p> <ul style="list-style-type: none"> ▪ Source funding to employ a consultant to develop the sector plan. <p>[These are possible suggestions some of which may be deleted, while others may be added]</p>			
12. Other Sectors	4	The other sectors that are part of the K2C region are equally important to the region, but at this stage are most likely able to be linked to other items on the table.	Needs to be captured as they arise.	Relevant people to be brought on board as the need arises		Assorted – depending on the sector and the need/s.
13. Grading program	3-4	<p>An idea has been on the table for a short while now, to formulate a grading / quality evaluating system specific to the industries of the K2C region. This idea has been re-enforced since the visit to the Rhön, which has similar kinds of grading systems in place, such as the “From the Rhön, for the Rhön” Initiative.</p> <p>The idea behind these “grading” systems is to encourage the industries to become as environmentally friendly as possible as well as ecologically & economically</p>	<ul style="list-style-type: none"> ▪ Study of all existing “grading” systems such as Fair Trade, ISO14000, Eurogap etc, which are pertinent to each of the industries i.e.: Tourism, Agriculture, Forestry, & Mining. ▪ Study of existing policies, & declarations etc, e.g. the Quebec declaration on Eco-Tourism / Cape Town Declaration on Responsible Tourism etc. 	K2C EXCO representative in consultation with a sector working group.	<p>Perhaps a Tourism working group in place by the end of 2007.</p> <p>By March 2008 a draft document in place for the quality rating of the products relating to the tourism industry.</p> <p>[The other sectors will follow in time]</p>	<p>A Grading / Quality rating system in place for each of the main sectors of the K2C Region.</p> <p>An informed / educated sector, committed to providing ecologically and economically sustainable products (in the broadest sense) from the region , for the public.</p>

		<p>sustainable, and secondly to help the producers / operators in these industries to then promote and sell their products to the local, national and international markets. Such a quality system would also help potential buyers / users of these products to be able to evaluate how / where they spend their money – they are able to make well informed choices & show their commitment to sustainable products.</p>				
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11. Conclusion

The members of the K2C group, that visited the Rhön, unanimously agree that this was an incredibly valuable experience. Everyone was able to learn and be exposed to many new ideas and concepts. On the whole there were some aspects of the RBR that made a greater impression than others, these include the production of renewable energy and the support and encouragement received by the government in becoming a more ecologically & economically sustainable community. The general support the German government provides to the RBR as an organisation, especially in terms of financial assistance, was of particular interest to the K2C group, for example, there are approximately 15 people employed by the German government (or departments there of) as officials of the RBR. Another feature that was particularly impressive to the K2C delegation was the unity and commitment of the people of the RBR. These people have been innovative in promoting the MaB principles and are supportive of the RBR, many of the people work together to create success.

As a result of the exchange program with the Rhön, the K2C members have been able to formulate what they would like to see happening in the K2C region and what is needed for the K2C organisation to evolve into a dynamic, productive and supportive organisation that can help lead the greater K2C community towards a more ecologically and economically sustainable life style.

Everyone is appreciative of the opportunity afforded them, and the K2C group looks forward to implementing some of the concepts learnt, and "Africanizing" some of the others so that these lessons learnt are worthwhile to broader stakeholder group.

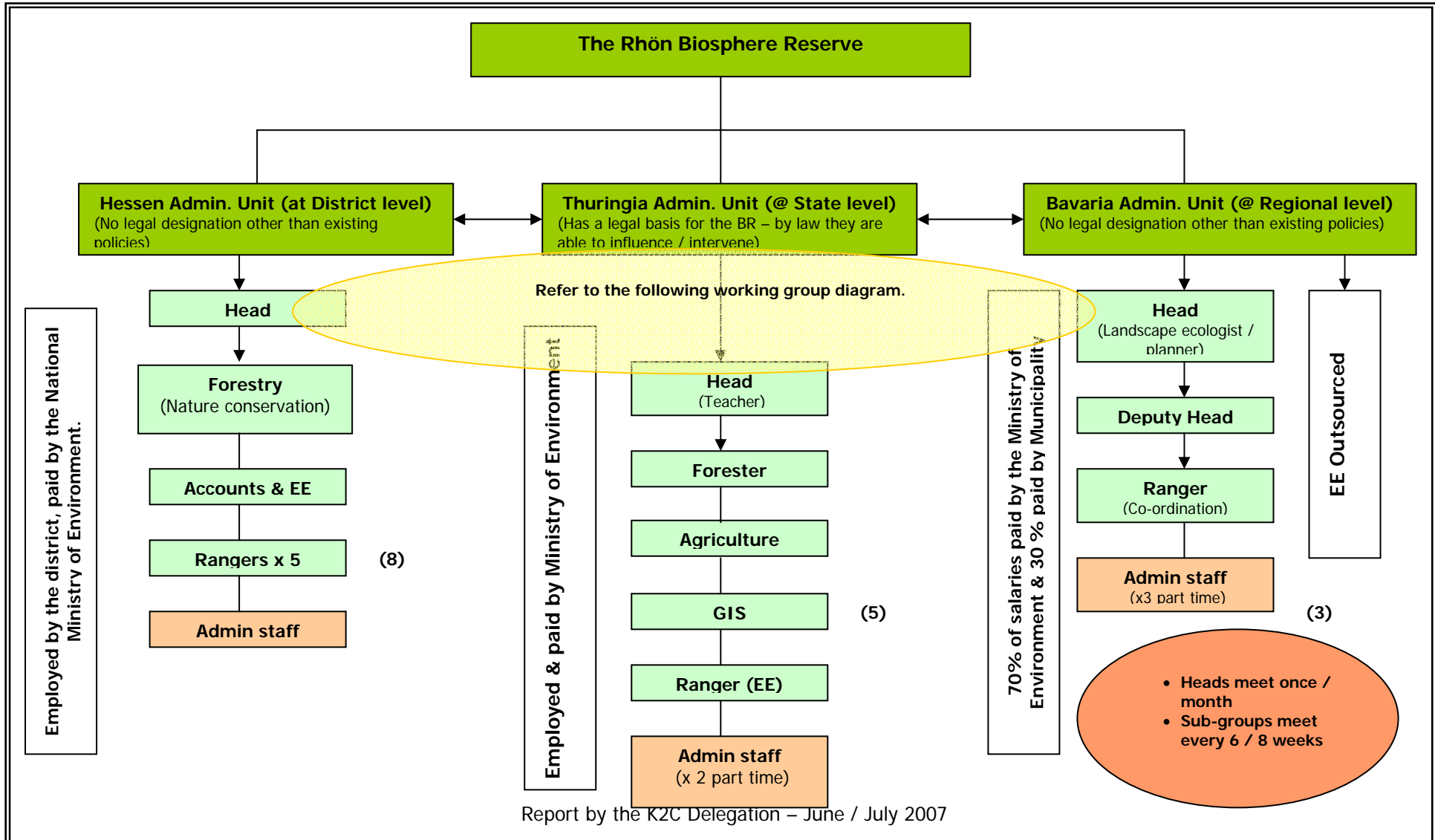
12. Acknowledgements

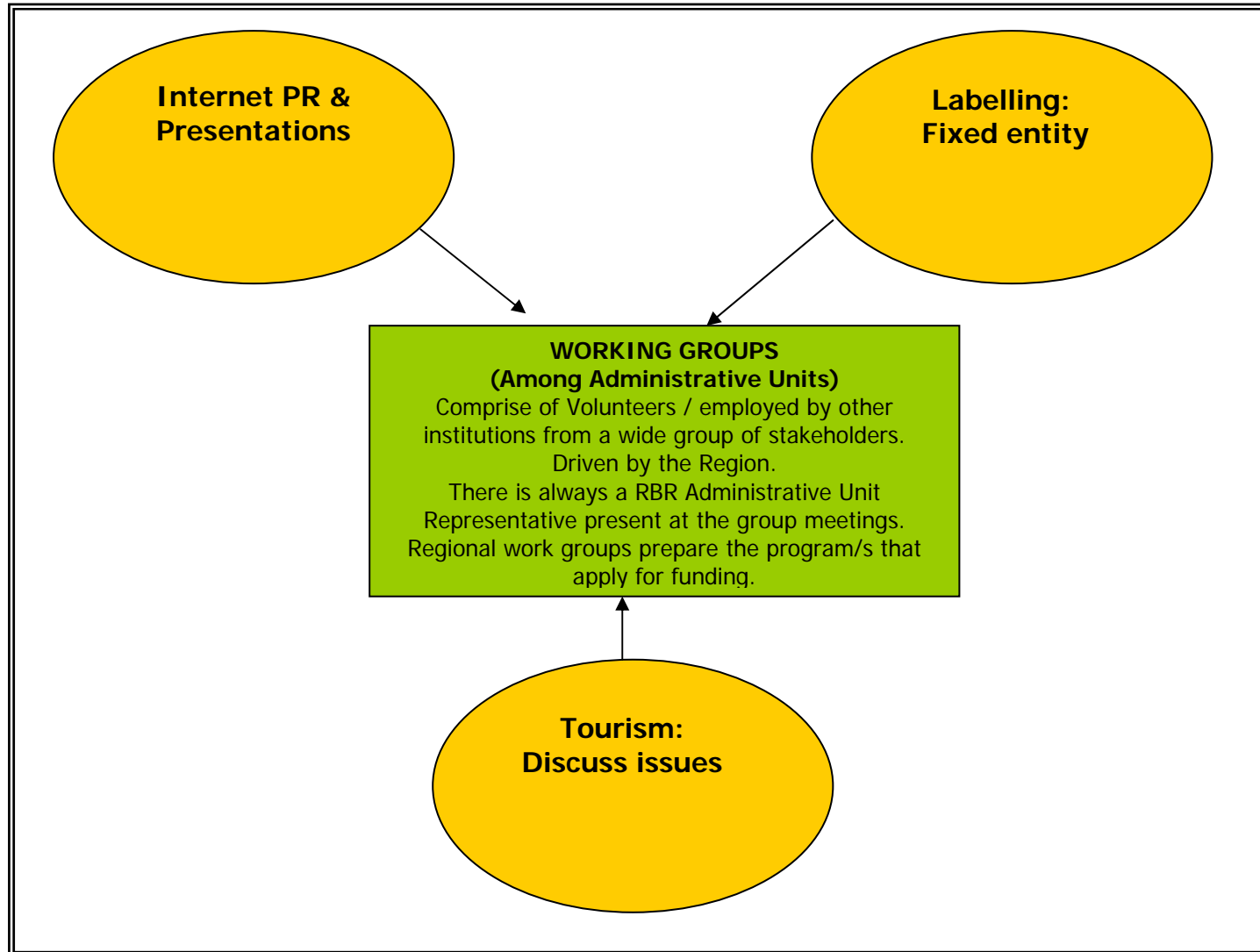
The Kruger to Canyons Delegation would like to express their sincere appreciation to all those people that contributed towards making the exchange visit to the Rhön a phenomenal and memorable experience. The visit proved to be considerably more than a learning experience, it helped expose the K2C team to new innovative ideas, helped build a K2C team committed to leading the K2C forward and opened the path for potential partnerships that could have positive economic implications for both Biosphere Reserve Initiatives. Equally important were the new friends made. In particular the team would like to thank the following people:

- ◆ **Suhel al Janabi:** For conceptualisation of the exchange program, support and guidance.
- ◆ **Doris Pokorny:** For organising a superb visit to the RBR, for all her time and
- ◆ **Mirjam de Koning:** For all the preparation, co-ordination and organisation that went into making it a successful exchange visit.
- ◆ **GTZ-MRDP & BFN:** For financing the exchange visit.
- ◆ **Jiska Troppenz:** For help and co-ordination.
- ◆ **Alexander Schuelke** For his continued assistance, concern and "on the ground" organisational arrangements during the week.
- ◆ **Michelle Terblanche**
- ◆ **Klaus Spitzl**
- ◆ **Thomas Stumpf**
- ◆ **Karl-Heinz Kolb**
- ◆ **Michael Geier**
- ◆ **Michael Dohrmann**
- ◆ **Claus Vorndran**
- ◆ **Adam Zentgraf**
- ◆ **Heino Goldblach**
- ◆ **Thomas Berger**
- ◆ **Norbert Schmäling**
- ◆ **Matthias Klöffel**
- ◆ **Debby Thomson** For her continuous contributions as the volunteer co-ordinator of the K2C Initiative. She gives unremittingly of her time and resources in order to see the initiative moving forward.
- ◆ **Herbert Holzheimer**
- ◆ **Ulrike & Jens Lilienbecker**
- ◆ **Dr. Aribert Bach**
- ◆ **Ulrich Schramm**
- ◆ **Silke Bräuning**
- ◆ **Olaf Strödecke**
- ◆ **Peter Kowalsky**




13. Appendices




13.1 The organogram of the Rhön Biosphere Reserve Organisation











13.2. Members of the K2C Delegation.

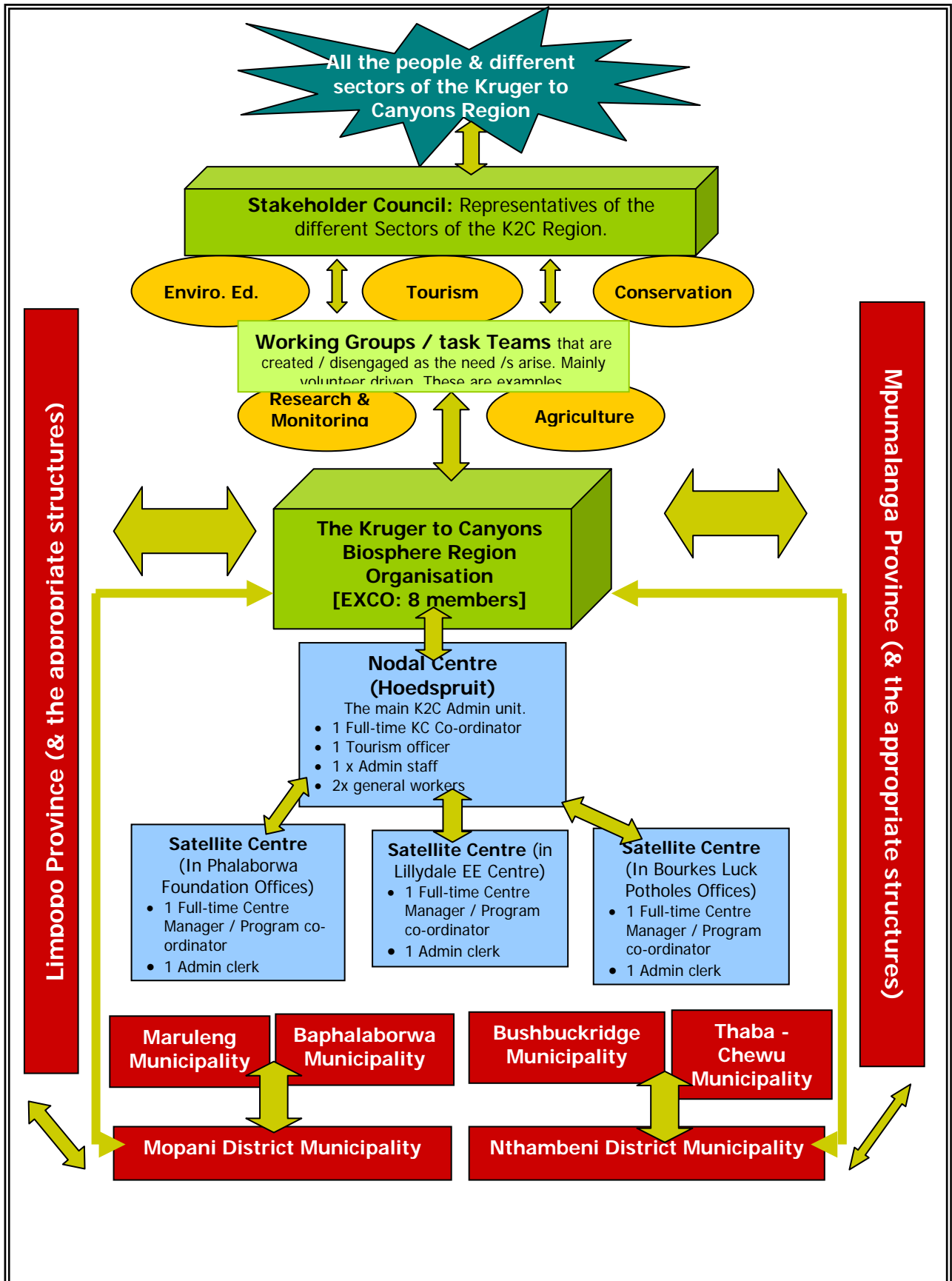
No.	Name (gender & age)	Educational Background	Professional Background	Picture
1.	Ms. Jenny Newenham 37 years	* Diploma & Higher Diploma Nature Conservation * B.Sc. Honours Zoology	* Worked in the formal conservation sector * Worked in protected area management: research + monitoring; community dev.: environmental education in protected areas and surroundings* * Now own conservation consultancy – assorted environmental work – EIAs; management planning; tourism dev. Plans for regions & protected areas; environmental training; field assessments; etc.	
2.	Mr. Canz Lisa 55 years	M.Sc. Development Planning (Wits University)	* Worked for South-African Council (SACC) * Employed as student registrar, Wits University * Employed as Chief Executive Officer for Easter Metro Council of Johannesburg * Currently employed as municipal manager for Bushbuckridge municipality	
3.	Mr. Refilwe Ramothwala 38 years	* Diploma Municipal Governance * Higher Diploma Education	* Head Master * Provincial spokesperson – LG + Safety * Head Of Department – Municipal Level	

4.	Mr. Lesiba Masibe 38 years	<ul style="list-style-type: none"> * Secondary Education Diploma * Degree Policy studies/ Development studies 	<ul style="list-style-type: none"> * Worked as teacher for 12 years * Worked as manager of a town council * Served in community based organisations including Biosphere Reserve 	
5.	Mr. Remember Makhubela 40 years	<ul style="list-style-type: none"> * Secondary Teachers Diploma * Certificate in Industrial Relations * Certificate in Tourism Development & Management 	<ul style="list-style-type: none"> * Currently working as an educator * Working for community based organisations, mainly on tourism, development, health and social services * Presently a serving counsellor in the local municipality 	
6.	Mr. Solly Themba 41 years	<ul style="list-style-type: none"> * Primary Teachers Diploma * Certificate in Environmental Education * Certificate in Conflict Management * Certificate in Public Participation * Certificate in Disciplinary steering * Currently studying Public Relations Management with UNISA 	<ul style="list-style-type: none"> * Currently working as community relations practitioner/facilitator for SANPARKS – Kruger National Park * Linking Kruger National Park with community * Creating mutual understanding between the two parties * Worked as a clerk for Gridaker * Worked as an educator * Served in K2C, chair and founder of an NGO (eco-plan) * Facilitated the formation of Kruger National Park community forums * Managed stakeholder participation in elephant management processes 	

7.	Ms. Maryna Matthee 50 years	<ul style="list-style-type: none"> * B.Sc. (Botany & Zoology) University of Pretoria * B.Sc. (Honours) (Wildlife Management) University of Pretoria * Certificate in Environmental Management (University Cape Town) * Certificate Resource Identification & Management (NW ARC). 	<ul style="list-style-type: none"> * Work as teacher, lecturer & environmental consultant (botany) * Worked for the Transvaal Provincial Administration as Nature Conservation Scientist * Work for the Mpumalanga Parks Board as Nature Conservation Scientist & Manager Conservation Planning * Presently employed as facilitator Conservation Initiatives with Mpumalanga Tourism & Parks Agency responsible for the management of: Conservancies; SA Natural Heritage Sites; World Heritage Sites; Biosphere Reserves in the Mpumalanga Province 	
8.	Ms. Debby Thomson 36 years	<ul style="list-style-type: none"> * Nature Conservation Diploma * Executive Advanced Business Diploma * Veld management & Vegetation research 	<ul style="list-style-type: none"> * Management of various tourism lodges * Management of corporate lodge & reserve * Community development initiatives * Started of own businesses involved in communications & event management; tourism promotion 	
9.	Ms. Marie-Tinka Uys 48 years	<ul style="list-style-type: none"> * B. Bibl (Ed) * B.A. (Honours) * M.A. (Adult Education) Wits * Dipl. in Project Management 	<ul style="list-style-type: none"> * Project Manager: K2C Biosphere Application to UNESCO * K2C Womans Empowerment Project - Project Manager * Short course manager Southern African Wildlife College * Project Manager INTAC (Integrated Tourism & Conservation Management Training) * Tourism manager 	

10.	Mr. Mike Scott 54 years	<ul style="list-style-type: none"> * Dipl. Botanical Research – Pretoria Technikon * Dipl. Financial & Labour Management – UNISA 	<ul style="list-style-type: none"> * 10 year – Research and Dev. – Novartis (Swiss) * Technical advisor on mango, citrus, avocado, lichi – Haus Merenshy Trust * Consultant for planning, erecting, turnkey pack houses for Sub Tropical Fruit * Planning, development and management of 6 Subtrop. farms 	
11.	Ms. Michelle Terblanche 30 years	<ul style="list-style-type: none"> * Honours Degree in Home Economics/consumer studies (Stellenbosch) * Busy with B.A. Environmental Management (UNISA) 	<ul style="list-style-type: none"> * Worked as a consultant in environmental and rural development consultancy * CBNRM (Community Based Natural Resource Management) Advisor at gtz-Rural Livelihoods Programme in the Eastern Cape – worked intensively with rural communities * Currently component manager of CBNRM at gtz-MRDP 	
12.	Ms. Mirjam de Koning 38 years	<ul style="list-style-type: none"> * M.Sc. in Nature Conservation & Animal Production (University of Wageningen) * Additional training courses in project management; organisational development; inter cultural training; environmental legislation; microfinance; PRA; gender; conflict management 	<ul style="list-style-type: none"> * Currently working as a co-management & CBNRM Advisor in Mpumalanga Tourism & Parks Agency (MTPA) under the Mpumalanga Rural Development Programme (MRDP) supported by the German Technical Cooperation * Previous working experience in rural development in Chad (3 years); microfinance and integrated conservation and development project in Lao PDR (5 years); natural resource management, community-based tourism and microfinance in Kenya (2 years); community forestry in Cameroon (1/2 year) 	

13.3. A possible Kruger to Canyons Biosphere Region Organisational Framework



13.4. A review on South African Governmental Policies on Renewable Energy – Compiled by Debby Thomson

RENEWABLE ENERGY POLICIES IN SOUTH AFRICA

A brief survey into the current policies of the South African Government and the DME (Dept of Minerals and Energy) as regards the production of renewable energy in South Africa.

This document is as a direct result of the Kruger to Canyons Biosphere exchange visit to the Rhön Biosphere in Germany, where a number of successful, stakeholder driven renewable energy production projects were visited



KRUGER TO CANYONS
BIOSPHERE REGION

Compiled by:
Debby Thomson
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BACKGROUND

As a result of the exchange trip to the Rhön Biosphere in June 2007, one of the key identified features was the remarkable level of use of renewable electricity in the region.

On return to South Africa, I have done a little more further investigation and reading in the policies of the South African Government as regards the implementation of renewable energy and I have come up with a considerable amount of detailed information as well as a number of assumptions.

A White Paper was drawn up by the Department of Minerals and Energy (DME) in November 2003 concerning the Renewable Energy Policy in South Africa.

According to my reading of the White Paper, a large amount of the information that we learnt in Germany is known to the SA Government, however, the stumbling block seems to be in the implementation thereof.

FINDINGS

Government's current understanding and support

The South African Government recognizes the increasing and worldwide concerns that the continued use of fossil fuels has as regards the emission of greenhouse gases such as carbon dioxide, however, due to being well-endowed with coal resources in particular, SA has been able to develop a large scale, coal based power generation system that provides low-cost electricity, through the National Grid system. It is also stated, that due to this abundance and relatively cheap costing, coal is likely to remain, from a financial point of view, an attractive source of energy for South Africa. The Government has also readily acknowledges that it has neglected the development and implementation of renewable energy applications, however, the significant medium and long-term potential of renewable energy is recognised.

Additionally, as a major portion of the current energy production is linked to dollar-denominated imported fuels (eg oil), they also recognize the lack of security this potentially brings. Therefore "energy security" has also been identified and thus the further investigations from their part into the use of renewable energies. What is currently proposed is a strategic programme of action to develop South Africa's renewable energy resources, particularly for power generation or reducing the need for coal-based power generation and has been drawn into the "Integrated Energy Plan" drawn up by DME in 2003. It is however, clearly outlined that

renewable energy production is at a very embryonic stage in the country.

As an additional background stage, SA has also ratified the United Nations Framework Convention on Climate Change (1997) and the Kyoto Protocol (2002), which creates the framework for tapping international funds via the Global Environmental Facility and the Clean Development Mechanism to reduce greenhouse gas emission.

Government's **long term goal** is the establishment of a renewable energy industry producing modern energy carriers that will offer in future years, a sustainable, fully non-subsidized alternative to fossil fuels.

It is stated in the white paper that it is DME's goal for 4% of SA's electricity generation to come from Renewable sources by the year 2013 (currently less than 1% is being used). Bearing in mind that Mr Schmaling informed us that Germany currently produces enough renewable energy to replace 40% of SA's current consumption, it could be questioned as to whether this is a goal to be proud of (personal assumption).

To reach this goal of 4%, they have stated that they will require a "phased and flexible strategy". The starting points have been identified as "early win" investments spread across both relatively low cost technologies (eg biomass-based cogeneration) as well as technologies with larger-scale application such as solar water heating, wind and small scale hydro, along with a focus on building and fine-tuning the required institutional framework.

The Government has also recognized that renewable energy produced from sustainable natural sources will contribute to sustainable development and the fact that SA is endowed with abundant renewable energy resources that can be converted to productive energy uses. However, it has also identified that currently, the utilization of these resources is not cost competitive in many locations when compared to SA's fossil based energy supply industry (this is mainly due to the high cost of implementation of renewable energy producers).

Taking this into consideration and in order for renewable energy technologies to be able to compete with current fossil-based technologies on a financial scale, DME has stated that there is a need for Government to create an enabling environment through the introduction of fiscal and financial support mechanisms within an appropriate legal and regulatory framework to allow renewable energy technologies to compete with fossil-based technologies.

In further readings of alternative documents, newsclips and web-based info, it was brought up a number of times that this is not entirely happening from the Government's side and in fact there has been substantial amounts of the annual budget that has not been used in previous financial years which could have been better implemented to supporting renewable energy projects and implementation strategies.

As regards institutional arrangements, electricity distribution in SA is currently undergoing restructuring including the corporatisation of Eskom (currently a parastatal) and the formation of six new regional electricity distributors. The White Paper on Energy Policy encourages the entry of multiple players into the generation market. However, the appropriate regulatory and legal framework will be needed to support the entry of renewable energy generators. The National Electricity Regulator has jurisdiction over the entire industry and regulates market access through licensing of all producers (greater than 5 gigawatts hours/annum), transmitters, distributors and sellers of electricity and should regulate the phased introduction of renewable energy generators. The Central Energy Fund should assist the implementation of renewable energy through the extension of its operational support

Government's Vision

Government's overall vision for the role of renewable energy in its energy economy is:

An energy economy in which modern renewable energy increase its share of energy consumed and provides affordable access to energy throughout South Africa, thus contributing to sustainable development and environmental conservation.

Governments identified strategic goals and objectives

The Government lists out the following strategic goals and objectives:

Financial: The goal is to promote the implementation of sustainable renewable energy through the establishment of appropriate financial instruments with the following objectives:

- ❖ To ensure that an equitable level of national resources is invested in renewable technologies, given their potential and compared to investments in other energy supply options.
- ❖ To set targets for the directing of public resources for the implementation of renewable energy technologies in

combination with international sources of funding for this purpose

- ❖ To introduce appropriate fiscal incentives for renewable energy
- ❖ To extend existing state financial support systems and institutions and introduce innovative approaches to the establishment of sustainable structures and financing mechanisms for delivering renewable energy systems.
- ❖ To facilitate the creation of an investment climate for the development of the renewable energy sector, which will attract foreign and local investors

Legal Instruments: The goal is to develop, implement, maintain and continuously improve an effective legislative system to promote the implementation of renewable energy with the following objectives:

- ❖ To develop an appropriate legal and regulatory framework for pricing and tariff structures to support the integration of renewable energy into the energy economy and to attract investment
- ❖ To develop an enabling legislative and regulatory framework to integrate Independent Power Producers into the existing electricity system.
- ❖ To develop an enabling legislative framework to integrate local producers of liquid fuels and gas from renewable resources into their respective systems.

Technology Development: The goal is to promote, enhance and develop technologies for the implementation of sustainable renewable energy with the following objectives:

- ❖ To promote the development and implementation of appropriate standards and guidelines and codes of practice for the appropriate use of renewable energy technologies.
- ❖ To promote appropriate research and development and local manufacturing to strengthen renewable energy technology and optimize its implementation.

Awareness Raising, Capacity Building and Education: The goal is to develop mechanisms to raise public awareness of the benefits and opportunities of renewable energy with the following objectives:

- ❖ To promote knowledge of renewable energy and energy efficiency and thereby to increase their use.
- ❖ To promote and stimulate the renewable energy market through the dissemination of information regarding the economic, environmental, social and trade benefits of renewable energy technologies and their applications.

- ❖ To persuade the appropriate Government and Government funded institutions to implement training and education programmes with regard to renewable energy.
- ❖ To actively involve women in decision-making and planning and promote empowerment in renewable energy programmes or activities.
- ❖ To improve communication and interaction between national, provincial and local Government institutions on renewable energy policies.

The Constitution

The current constitution states that Government must establish a national energy policy to ensure that national energy resources and adequately tapped and delivered to cater for the needs of the nation. Energy should be made available and affordable to all citizens irrespective of geographic location. The production and distribution of energy should be sustainable and lead to an improvement in the standard of living of all citizens.

In order to meet the Government's obligations in this regard, the White Paper on Energy Policy states:

Government will work towards the establishment and acceptance of broad targets for the reduction of energy related emissions that are harmful to the environment and to human health

The Integrated Sustainable Rural Development Strategy (ISRDS)

The ISRDS was "designed to realize a vision that will attain socially cohesive and stable rural communities with viable institutions, sustainable economics and universal access to amenities, able to attract and retain skilled and knowledgeable people, who are equipped to contribute to growth and development".

While the contribution of the energy sector is to provide basic energy services to rural areas, in particular extending access to electricity including non-grid electrification and mini-grids as well as improving access to other fuels and appliances, the effort should also be viewed as an opportunity to create an economic base via agricultural and home-based industries and SMME's in order to grow the income-generating potential of communities. Such energy activities should be coordinated with the Integrated Development Plans of Municipalities.

Barriers to Renewable Energy Implementation

There are a number of aspects that the Government identifies as significant barriers to furthering the implementation of renewable energy that need to be addressed. The key issues include the following:

- ❖ Many renewable energy technologies remain expensive, on account of higher capital costs, compared to conventional energy supplies for bulk energy supply to urban areas or major industries.
- ❖ Implementation of renewable energy technologies needs significant initial investment and may need support for relatively long periods before reaching profitability
- ❖ There is a lack of consumer awareness on benefits and opportunities of renewable energy
- ❖ The economic and social system of energy services is based on centralised development around conventional sources of energy, specifically electricity generation, gas supplies and, to some extent, liquid fuel provision.
- ❖ Financial, legal, regulatory and organizational barriers need to be overcome in order to implement renewable energy technologies and develop markets.
- ❖ There is a lack of non-discriminatory open access to key energy infrastructure such as the national electricity grid, certain liquid fuels and gas infrastructure.
- ❖ Market power of utilities

Renewable Energy Resources

The mere availability of a renewable energy resource does not mean that that resource can readily be used as an energy source. To utilize a resource several factors need to be considered: the conversion system, the quality of the "fuel", conversion costs, transport cost as well as the size and location of the demand.

Potential resources identified in SA include:

- ❖ **Wind** – potential is generally good along the entire coast with localized areas of higher potential (the Lowveld is listed as a region of low potential and the higher regions of the escarpment listed as moderate regions)
- ❖ **Biomass** – the main sources being fuel wood in rural domestic sector (sustainability highly questionable), bagasse in the sugar industry, pulp and paper waste in commercial forestry industry, as well as considerable potential for production of bio-fuels from energy crops such as maize sunflowers and the *Jatropha* tree.
- ❖ **Hydro** – from my understanding and readings it seems to me that the Government is only focusing on large hydropower

schemes involving large dam walls and extensive water flow and very little is stated about the small scale schemes that may be able to be run on smaller rivers and canals, as we experienced in the Rhön

- ❖ **Solar** – South Africa produces some of the highest levels of the solar radiation in the World (average daily solar radiation in SA varies between 4.5 and 6.5 kWh/m² compared to an average of 2.5 kWh/m² for Europe (which would include the Rhön region)).
- ❖ **Wave Energy** – obviously not applicable to K2C
- ❖ **Ocean Currents** – similarly not applicable to K2C
- ❖ **Energy Waste** – South Africa disposes of almost all of its refuse to landfill sites which produce high levels of methane. Options for energy production from municipal waste are being examined including biogas projects as well as methane gas from landfills. It is my suggestion that this might be a good starting point for renewable energy in K2C particularly as Maruleng are in the process of creating a new landfill site located centrally in one of the rural communities. A potential pilot project could possibly be investigated with National Government's DME.

In summary of the resources available, certain technologies such as solar water heating and photovoltaics are well developed and are generally available. The identified challenge is for DME or SA in general to identify those technologies that are most suitable for widespread application in South Africa.

In general – the White Paper states - renewable energy power plants have a lead time of approximately 3 years as compared to conventional coal fired plant that has a lead time of approximately 5 years (according to EIA's conducted in 2001). Distributed generation (many small units), they state, would have the shortest lead time.

Creating and Enabling Environment

The White Paper recognizes that the establishment of an appropriate enabling environment through the development of fiscal, financial and legislative instruments, will therefore be required to stimulate increased utilization of these technologies. This includes Government support for renewable energy to help establish an initial market share and non-discriminatory open access to the national electricity grid and other energy infrastructure).

It also states that many of the renewable energy technologies are currently under-developed or not fully commercialized compared

with conventional options and hence costs tend to be high. There is a reluctance to invest in what are sometimes considered to be risky investments. It also recognizes that by undertaking demonstration projects with stakeholders these risks can be clarified and options to address them tested.

Financial Instruments

The White Paper states that to overcome the initial high capital cost and increasing the commercialization of renewable energy technologies in a market driven energy economy, will guide funding for renewable energy technologies. They also recognize that Government funding will be a catalyst in attracting concessionary donor and public/ private funding to drive the commercialization of renewable energy technologies. Government funding will be sourced through government financial and fiscal measures eg budgetary allocation, subsidies, levies, tax rebates or other incentives. They also state that this process should be monitored and evaluated in order for the appropriate phasing out of this funding as renewable energy technologies become competitive and are driven by market forces alone.

The White Paper reflects and considers the various financial support approached in various countries as regards the generation of renewable energy.

The first being the **Production Incentive** such as the “feed-in” system that we experienced in Germany, where producers are paid for the electricity they feed into the National Grid.

The second being **Investment Incentives** such as is done in the US where direct subsidies and/or tax credits to stimulate investment in renewable energy technology

The thirds being the **“Set aside” approach** which involves a block of energy supply that is earmarked by law for renewable energy capacity. Potential renewable energy generators tender to provide the block of renewable energy supply. Winning projects receive financial support eg subsidy per kWh or a guaranteed fixed electricity tariff.

The White Paper includes the following table listing the Advantages and Disadvantages of each approach

Tool	Advantages	Disadvantages
Investment Incentive	Overcomes high first cost barrier	Encourages investment, not production
Production	Easy to Implement	Does not directly address

Incentives (eg feed-in)	Easy for developers Encourages Renewable energy production	high first cost barrier Can be abused if incentive too high
Renewable Set-asides	Allows control over amount of renewable capacity added Competitive bidding encourages cost reductions	Can be very bureaucratic Bids may be controlled by one entity May lead to lumpiness in installations

In addition to the points listed above, other problems listed as regards set asides include – the expensive bidding processes and “lumpiness” (not sure what they mean by that) in capacity of additions if the set-asides are not managed in smooth progression. Additionally, to ensure sufficient diversity projects should be grouped in separate categories, so that no one technology will eclipse the other.

In the very next paragraph however, the White Paper then states that a combination of “set-asides” couples with investment incentives are potentially the best for SA.

At a quick glance, production incentives (as is done in Germany) seems the easiest, quickest and most inclusive approach (encourages inclusion by all levels of residents not just large corporations or organizations), however, it does not seem the government currently recognizes this potential.

Legal and Regulatory Instruments

The White Paper recognizes that an enabling environment will also require the introduction of certain regulatory measures:

- ❖ Generation or refining licenses
- ❖ Introduction of grid-connection or pipeline connection code which governs the minimum requirements of connecting to the current Grid or pipeline network
- ❖ New infrastructure to link renewable energy supplies into the existing transport infrastructure, which will need appropriate mechanisms to facilitate this
- ❖ The procedure and charges for wheeling the power from the generator to a customer through the national electricity grid needs to be defined and regulated in order to keep transport (wheeling) tariffs for renewable electricity low where existing infrastructure is used, and similarly for petroleum products.
- ❖ Open access to the national electricity grid and petroleum pipeline infrastructure. This would need to be legally defined and regulated by Government
- ❖ Power purchase agreement of sufficient duration between the generator and the purchaser of the electricity.

- ❖ The development of a system to compensate for the cost of electricity generated from different technologies and from different geographic locations, and similarly for petroleum products.
- ❖ Minimum contributions to the national supply from renewable energy resources

Energisation of Rural Communities

Further information in the white paper that I thought was relevant to the K2C renewable energy interest includes the statement that the DME is spearheading the implementation of the concept of "energisation" in the rural areas in conjunction with the rural electrification programme in order to address the energy needs of communities in a sustainable and consistent manner. An electrification programme, particular if it has a strong non-grid component, has to form part of a holistic approach to energy provision, if it is to succeed.

Additionally, the White Paper recognises that currently, in rural areas, women are the main users of fuel wood for meeting household energy needs but also bear the burden of collecting fuel wood. Woodlands have been depleted in many areas and in others they are under heavy pressure. It is also stated that sustainable energy development could have a positive impact for women. But this can only be realised when women's concerns are properly reflected in energy policy-making and there is more emphasis on end-users. This will lead to:

- ❖ Recognition of women's non-market labour time as human energy and to the relief of this burden and an objective of energy policy
- ❖ Involvement of women in policy formulation and planning for fuels and appliances
- ❖ Bridging the gap between designer and end-user regarding energy efficiency improvements in stoves and other appliances
- ❖ Availability of more information on alternative sources and technologies,
- ❖ Recognition of energy needs in transportation, food harvesting, drying and processing,
- ❖ Diversifying fuels to substitute fuel wood by more efficient and cleaner technologies
- ❖ Involvement in decision making regarding energy matters at energy forums.
- ❖ Assisting women to develop entrepreneurial skills through productive uses of renewable energy technologies.

Electricity Storage

Renewable Electricity is not always available when required – specifically wind and solar electricity that are reliant on intermittent resources. South African energy supply system relies on the storage of energy in fossil fuel stockpiles such as coal and liquid fuel storage depots and electrically charged pumped storage schemes. Enriched nuclear fuels can also be stored more-or-less indefinitely until the useful energy is required to be released in electricity generation facilities.

Although an extremely versatile energy carrier in terms of modern appliances and industrial applications, electricity is probably the most limiting carrier in terms of storage. It tends to be very expensive to store and electrical supply & demand must be continually and instantaneously balanced. This balancing act requires the provision of so-called spinning reserve. This refers to the maintenance of power plants in a state whereby they are almost ready to be brought on-line should there be a change in electrical system demand or a failure of another electrical supply option elsewhere on the network. Typically, wind and solar resources cannot be managed in this way – and it is therefore necessary to identify other energy storage options, that can be used to top up the supply when demand peaks, or if intermittent resources reduce output.

Storage Options for Electricity

In South Africa, most electrically generated energy is stored in the three pumped storage schemes. These plants can be brought on-line at very short notice in times of high demand or inadequate generation in the system. In times of low demand, excess generation capacity is utilised to fill the dams that provide the storage capacity. The greater the difference between maximum and minimum system demand, the greater the need for expensive plants that provide peak demand and/or storage capacity.

This is particularly important for renewable resource based electrical generation, as its output can be less readily predicted and therefore requires increased “back-up” generation and/ or storage capacity. The increased need for electrical system storage capacity, in the form of pumped storage or other energy carrier storage, is therefore a limiting factor in any transition to a sustainable energy system.

Fortunately, as the variety of renewable energy technologies and generation sites increase, with different sources installed over a large area, the need for storage capacity begins to decrease again as the electrical network itself effectively becomes the storage pool.

This type of argument forms part of the rationale for a more distributed generation system.

There is a range of different technical solutions to meet short- and longer term storage needs. The technologies can be roughly divided into relatively fast storage types with high output (eg capacitors, flywheel, superconductors) and slower types with high energy content (eg pumped storage hydroelectric plants, compressed air tanks, electrochemical storage). To keep costs down, pumped storage hydroelectric plants are most often used to provide large scale grid support for mid-to long-term energy storage. Redox systems, especially those using Hydrogen, are being developed as future storage systems.

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