



CBNRM-MISSING LINK
Phase 2, Project Report n.1
1st July 2002 - 31st December 2002

By IUCN and PTB

Contractor's project Report

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1. Project purpose, overall goal; brief description of the project

The emergence of CBNRM (Community Based Natural Resource Management) activities in Botswana dates back to the late 1980's, when initial proposals were discussed to pursue wildlife utilisation at community level. In a broad perspective, CBNRM offers remote communities potential to address the immediate needs of income generation and poverty alleviation but also links it to (sustainable) resource management. However, it has for a long time concentrated on short-term issues, neglecting long-term environmental management, neglecting most of the natural resources by concentrating on wildlife and veldproducts, and hardly getting to household level.

In Botswana, and many countries in Southern Africa, the drawbacks of inappropriate resource-waste-water management are very severe. Existing approaches to natural resource management, wastewater and sanitation are largely non-viable and non-affordable to a majority of people living outside major centres and do not offer an approach to a sustainable society / livelihoods.

In order to address long-term environmental sustainability, there is a need to get a better handle on how households and communities utilise their environment and to identify an integrated way forward, which would take on board many more resources than only the above mentioned.

This project aims to work first at household level by focusing on issues such as natural resource management, waste management, environmental sanitation (including the use of sanitised matter for growing purposes), water (re-) use, etc., as practised by individual households. Once a better appreciation about environmental management at household level will have been gained knowledge will be transferred to the "bigger" community.

In order to best face environmental management at Household and Community level and in order to get into a long-term sustainable use of the resources, the above issues will have to be seen as integrated activities, very tightly linked together. The integration of the management of living natural resources (e.g. veldproducts, wildlife, forestry, agriculture, gardening etc.) and non-living natural resources (e.g. water) as well as sanitation aspects will have to be worked upon in an integrated manner.

Many natural resource uses, norms and values are assumed but poorly documented. Indigenous knowledge systems are in operation but often have a non-species specific environmental focus. Research and detailed work will have to be done, so to be able to link Indigenous Knowledge with sustainable environmental management, thus changing from a very limited natural resource conservation aspect to the idea of sustainable natural resources use.

How does Sanitation (Ecological Sanitation) fit within such a natural resource management project? Ecological Sanitation is directly related to natural resources. On the one hand it improves health and sanitation aspects within households and communities, reduces underground water pollution (against pit latrines) and generally allows for a better conservation of our water resources (against flush toilets); on the other hand its sanitised matters also called by-products have a very competitive fertilisation and conditioning value and are re-usable for growing purposes.

The overall goal of the project within its 5 years, is “...to develop, test and demonstrate a holistic / integrated approach to environmental management, sanitation and waste management at homestead / household and community level in selected communities”.

1.1 Expected overall results

The expected general results linked to the implementation of the project over its entire duration (5 years) shall mainly be the development and testing of community based environmental management approaches and methodologies at household (later community) level. This shall include the design, implementation and monitoring of environmental-sanitation-waste management activities, as far as possible including the use of dry, sanitised and/or composted matter in a manner that would improve household/community food security and income generation, through growing activities.

1.2 Phase 1, Research and Planning – Main results achieved (May 2001-June 2002)

Phase 1 of the “Missing Link” project was meant to basically concentrate on mobilisation, research and organisational aspects. In particular during the first year necessary structures, recruitment and linkages with communities and authorities have been put in place, and the general set-up of the project and mobilisation aspects have been covered. The project implementation sites have been revised from the sites proposed in the first project draft. The “Missing Link” is now being implemented in Paje (Central District) and East/West Hanahai communities (Ghanzi District), respectively 10, 5 and 5 Households each (instead of Chobokwane and Mogorosi). Furthermore, the project staff and some community members have been trained in some of the aspects designing this integrated project (integrated management of living and non-living natural resources, sanitation and waste). Research on rural Ecological Sanitation and basic water and waste management applications has been carried out. The results of the research will form activities to be implemented during Phase 2 and have helped in identifying further training needs. Pilot households in selected villages have been identified and assessed and, towards the end of Phase 1, relevant activities have started.

Generally activities have been implemented as scheduled with the introduction though of a more adaptive and flexible process where project staff could reasonably adapt project activities to specific needs (e.g. Organisation of several training courses and workshops).

It is important to highlight that as a pilot project involving several aspects of the daily life, it was felt very important that community members and participating Households fully understand the project and that they make it their own project straight from the beginning. The full participation of everybody (Households, relevant community members, Government extension officers/department etc.) and their direct involvement was felt necessary before the start-off of activities. Towards an effective and participatory approach, the process of involving communities, introducing and explaining the project as well as gathering reactions, needs and fears of possible participants was the more important aspects to be covered and has as such been the focus during Phase 1.

In rural communities, as the once chosen by the project, there are also other aspects to keep in mind as the lack of employment and of income generating activities. In Botswana, with a heavily subsidised system, voluntarism could fail to the benefit of turning towards quick and direct income rather than long-term income generating activities (e.g. drought relief programme called in from June 2002-June 2003).

In order for the project to be fully understood and followed by these very poor families it was even more important to give a clear picture of what the advantages and disadvantages as well as the risks are. In this sense an accurate awareness raising and advocacy of the project has taken place all along the year. It positively contributed to the start off of the project that: some community members knew the organisations (PTB, IUCN), some knew CBNRM, others knew the Eco-San systems! It was also confirmed how important it is, especially in a society like the one in Botswana, to keep in mind traditional hierarchies and the importance of community participation when starting of a process (e.g. every process that wants to be respected needs first to be presented to the Kgosi-Chief of the community, to the VDC-Village Development Committee, to the Kgotla-community meeting etc.). In the case of our project and keeping in mind the community follow-up phase it is even more important that community members are informed about all the details straight from the beginning

The aspect, which was felt, slightly slowed down the proper start-off of activities during the first phase, was the uncertainty to get a contract for Phase 2. Mobilisation and introduction issues had been finalised between February and March 2002, with at first 1 month left before the end of Phase one (April 2002) later on the Phase was extended to the end of June 2002. In poor communities as the ones involved in our pilot project, coming in with a new project raises expectations (even a self-help project as this is), starting with a bulk of activities and stopping them only a few months later would have been disastrous. In this sense it was decided it would be better to slowly start with the “less expensive” and more sustainable activities (e.g. growing plants) and give inputs on parallel use of grey-water and composting techniques, activities which could be carried on by the HH whatever would have happened at the end of Phase 1. On the other hand such a slow start-off has allowed project staff to better learn to know the Households and to already identify problem areas with them.

In parallel with the start off of project activities, assessments of the communities and of the Households have been carried out. Although some community members have heard and know about Eco-San, the acceptance and use of by-products remains to be seen. Regarding structural arrangements, generally, the collaboration between the partners (IUCN, PTB and the communities) has been very good. The formula of having a coordination and link to government departments at IUCN in Gaborone and the extension work directly undertaken from PTB local offices in the districts was felt to be a very effective option. Finally, the participation of most of the invited stakeholders at the Planning workshop was interpreted as a sign of interest and commitment with the hope that the collaboration will remain fruitful until the end of the project and beyond.

1.3 Phase 2, Assessment and Implementation – Expected Results

Activities of Phase 2 are a direct continuation and extension of Phase 1 and will include the design, implementation and monitoring of environmental-sanitation-waste management activities. Ecological Sanitation aspects will be tested towards improving household/community food security. They will include the use of dry, sanitised and/or composted matter for growing purposes (e.g. Planting fruit trees, shade trees, growing backyard gardens etc).

Phase 2 will be divided in two main stages:

a) Particular emphasis on the design and implementation of environmental management, sanitation and waste management activities at **household level** will be given during the first part of Phase 2 (see attached Activity Chart Phase 2 for details). For sustainability purposes, households are motivated to participate under the banner of self-help rather than expecting payment for cooperation in the project.

b) Lessons learnt out of those experiences will than be transferred to a **community level** for the design of Community Environmental Action Plans, towards the end of Phase 2.

Because of its piloting aspects the project will go through an adaptive process of implementation linked to research and training in relevant fields (eg. PRA's, water conservation, waste management, ecological sanitation, and community action plan design etc.). During Phase 2 further specific household and community assessments (PRAs) in the selected villages will also take place. Approach, tools, methodologies and applications positively tested will be documented and published for further training/capacity building purposes. Monitoring tools shall be put in place so to be able to monitor and evaluate the project in its different stages and fine-tune it when necessary.

1.4 Phase 3, Advocacy and Capacity Building (2005-2006)

The third and last Phase of the project should mainly look at disseminating lessons learnt and experiences gained to a broader constituency and at a national level. A manual on integrated management of resources at household-community level should be developed; training workshops for NGOs and government extension staff (service providers) undertaken; documentation and publication of project experience developed and distributed; and advisory services to existing and potentially new activities in additional areas / communities provided upon request.

Funds for the third Phase will have to be raised in due time.

2. Activities undertaken and Results achieved – Phase 2

2.1 July-December 2002

Activities related to Phase 2 started-off during the month of August, once contract negotiations had been concluded.

Backyard gardening, tree planting as well as basic waste management activities that had already been initiated by households at the end of Phase 1 were monitored and supervised during the whole reporting period.

Gardening and tree planting has been successful in terms of acceptance by the participating households. In fact most of them have planted trees (shade and fruit trees) and set-up vegetable gardens. Although most of the households have put a lot of effort in growing and maintaining the gardens unfortunately damages by birds, domestic animals, insects and lately heat/drought have been reported and remain a major problem.

Regarding waste separation it was noticed that in all three communities it is a concept that people have difficulties of understanding and internalising. In Paje it was observed that the learning-by-seeing experience can help in motivating people, for example households that had visited one participant who is very active in re-using waste within the yard (in particular cans, bottles and plastic) have also started collecting and decorating their yards with cans and bottles.

The initial stage of Phase 2 has furthermore been concentrating on building and finalising the first Ecological Sanitation systems in 7 selected Households (2+2 in the Hanahais and 3 in Paje). During the period August-September necessary materials have been purchased. It is important to notice that, as the project works under the

banner of self-help it was commonly agreed that project funds would contribute to the purchase of the Urine Diverting pedestals and building of the structure up to the Slab (ground level), whereas households would carry all expenses and work related to the building of the superstructure. This was felt being an initial compromise that would confirm the commitment of the households to the project but also and more importantly allow households to gain real ownership. The building of all 7 structures up to ground level has been concluded and all 7 households were given the pedestals. At the end of December the building of the superstructure had been finalised and the toilets were operational at 2 households (1 in Paje and 1 in East Hanahai). The superstructures of the other 5 toilets (3 in East and West Hanahai and 2 in Paje) were close to being finalised with some needing the doors to be set-in, others waiting for the roofs to be finalised. Delays that occurred within those five households were mainly due to financial constraints of the families. Nevertheless and according to the advanced status of construction all 7 Ecological Sanitation systems should be fully operational by latest the end of January 2003.

At this stage it is already worth mentioning a few aspects that came out of the eco-sanitation component of the project:

- It seems that the households in the Hanahai's prefer the diversion of urine into a soak pit around which they can plant trees, whereas in Paje the household that is already using the system has chosen to collect the urine into a container located directly outside the structure. It will be interesting to see how the activities in the different communities will further develop.
- Although the household in Paje already had a pit latrine, it has been very keen in investing in and building the Ecological Sanitation system. The new toilet is very spacious and is considered a "bathroom" space. As the family uses the space also as bathing facility a close monitoring on water infiltrations into the pit will have to be carried out. A similar approach had been spontaneously started at the finalised toilet in East Hanahai. Unfortunately and again because of financial constraints the household had to brake down part of the walls and reduce the space so to be able to afford the roofing of the structure with corrugated iron sheets.

During the month of October-November 2002 and just before the rains:

- A one-day water-harvesting workshop was organised and held in West Hanahai (including HH from East Hanahai). 15 participants attended the workshop. Specific objectives were: to identify water-harvesting possibilities in the settlements; share ideas and experiences on traditional water harvesting methods and to undertake demonstrations on simple water harvesting techniques/methods. At the end of the workshop everybody was encouraged to start harvesting water and start making productive use of grey water to produce extra fresh products from their backyards for their families.
- A one-day workshop looking at conscientise participants on the importance of saving water, including runoff from rains and catching roof runoff in containers was organised in Paje. Issues presented included: rainwater roof catchment and storage techniques (tanks); catchment and storage from land (dam); storing water in soil/controlling runoff; Reclamation – converting eroded areas to wet areas; water saving devices and methods in the home and in agriculture. The workshop was divided in two session: theory and practical applications. At the end of the workshop everybody agreed that Paje has an ideal terrain for water harvesting and reclamation of land/soils at household and community level could have a major impact. All agreed that other similar but longer (3-4 days) workshops on water harvesting should be organised and that it should be considered as a very important aspect of the project.

At the end of both workshops most of the participating households set-up basic water harvesting techniques in their homesteads: in the Hanahais mostly looking at collecting rainwater and in Paje mostly looking at designing water flow channels.

During the month of November and in an optic of assisting those households that are involved in the national drought relief programme to come back to their homes and implement a few of the project activities without losing the benefit of being involved in the programme but also in an optic to further involve other community members, a 4-days production workshop for HH and community members has been held in the Hanahais.

The workshop looked at ways of encouraging effective participation of household and other community members in project activities. The workshop was attended by 25 participants comprising 9 HH and 16 non-households from both East and West Hanahai. The main aim was to engage all the project participants in a teamwork situation where they could interact, share ideas and knowledge as well as help each other to implement activities that were still lagging behind. These type of workshops should be encouraged as they motivate participants to be more active! Main achievements have been: 100 mixed plants were planted in 25 compounds, 5 backyard gardens were revived and shade nets repaired, 3 water-harvesting techniques started operating, 2 eco-san toilets were nearly completed.

On a team/management level it is important to mention that in September 2002 a new CLO for Paje has been employed by PTB. This has been beneficial to the implementation of project activities, which have been positively affected by the change. In fact, in order to avoid any delays in the project implementation the CLO has been selected amongst the participating household: he is living in the community, has been involved in the project since it's very start and participated to all the workshops/visits organised. The new CLO is very well accepted by participating HH and by the community in general.

The adaptive training of staff members has also continued:

- one supervisor attended a two-weeks (11/11-22/11/02) advanced International training course on "Ecological Alternatives in Sanitation" organised and partly sponsored by SIDA in South Africa. The main objective of the course was to strengthen the capacity to plan and manage sanitation systems through acquiring information and knowledge about new options in sanitation in order to support urban dwellers in reducing environmental health risks, improving their nutritional status and protecting their water sources. The choice of having only one supervisor attending this workshop was mainly due to the length of it. Knowledge gained and documentation collected will be shared amongst project staff and participating households.
- one CLO attended two workshops organised and partly funded by a local NGO, CORDE (Cooperation for Research, Development and Education, Local NGO). The workshops dealt with "Participatory Development Methodologies" including aspects of: Democracy, Decentralisation and Participation; group leadership and group dynamics; participatory development methodologies and planning workshops. The course was split in two sessions, September 2-5 and December 1-7, 2002. Additional information on PRA spatial and time related data collection techniques were inserted through practical experiences. Only one CLO participated because the other CLO had already attended similar workshops organised by CORDE in previous years.

On November 20th 2002 the third Reference Group meeting was held. It has been an opportunity to give a status-update on project implementation to all the members and also to discuss and define further activities to be undertaken and modalities of

implementation. The Reference group meeting has been attended by 9 organisations out of 14 (see list in annex). During the meeting a new member of the Reference Group was introduced, SMEC. SMEC is the team that since beginning of 2002 has been working on the development of the “National Master Plan on Waste, Water and Sanitation” for the DSWM.

Finally during the month of November a poster on project activities for distribution to a broad public has been developed and finalised and has already been distributed in several occasions.

During the first months of Phase 2 monitoring tools have also been developed and finalised (see annex).

Main highlights of the period July-December 2002:

- Finalisation and use of 1+1 Urine Diverting Ecological Sanitation toilets (Paje and Hanahai's). It seems like the by-products will mainly be used to supply urine for the production of vegetables and fruit.
- Most of the project aspects have already been translated into activities and community members are interested in expanding these activities. The workshops held until now in all three communities have had a positive impact on project implementation and in motivating participating households.
- Despite all the problems faced for the maintenance of the gardens, one household in Paje has already been able to sell vegetables (in particular tomatoes) with an income of circa 70P.
- The majority of the people in both Hanahais talk openly and excited about the use of human urine and solid waste as “plant food”!
- The chief, VDC Chairman and Family Welfare Educator in East Hanahai actively participated in the production workshop and are keen to see themselves participating in the promotion of ecological sanitation toilets as well as the integrated management of resources around households.

Main problems encountered during the period July-December 2002:

- Especially in the Hanahais, although participants are committed, many of them are involved in the drought relief programme, this slows down activities within those households.
- As already noticed in 2001 during the rains (circa November to February/March) some activities slow down because of the ploughing season. Even this year, although the rains have not yet properly started, some participants have been preparing for the ploughing season and have slowed down activities related to the project.
- The construction of the superstructure of some of toilets has been delayed in some households, mainly due to financial constraints of HHs. For the sake of the sustainability of the activities within the project though we will have to acknowledge and accept that some activities might be delayed.
- Fencing and proper protection of the backyard gardens remain major problems!

In the **next coming** months (see also activity chart) the project should mainly concentrate and focus on: finalising, improving and monitoring activities started-off between April and December 2002: Water harvesting/conservation/re-use improved; Backyard gardening extended; Waste collection/separation improved; Ecological Sanitation systems tested and provided to other participating Households; Fencing problem addressed through natural fencing systems etc.

Other relevant activities will include:

- Once HH have started internalising the above activities, activities related to other natural resources such as veld products for example will have to be initiated through: a consultative workshop on IKS organised in the communities. This will help in the identification of resources availability within the targeted communities and the identification of natural resources suitable for further management at HH level and later at community level.
- Social acceptance levels for the use of Sanitation by-products to be established in the months following the finalisation of the UD-systems.

Finally and as many households are implementing aspects of the project visits of participants to the three communities should be facilitated.

3. Conclusions and Recommendations

During the first 6 months of Phase 2 all main activities have been undertaken as initially established and scheduled. The project has also covered all of the recommendations made in the Final Report of Phase 1.

Generally project activities have taken-off well and the efforts and time put into the long mobilisation period of Phase 1 are showing their first results with Households being committed to the project and investing into it and other community members also participating more and more.

Although the project is still in its initial implementation phase and although the number of activities implemented by participating households is still little, an impact outside the communities involved in the Missing Link can already be observed.

In fact, besides the achievements within the project other communities in Botswana have already shown an interest in learning more about Ecological Sanitation as an option to conventional sanitation. A remote community in the Central District (Mmatshumo, Lekhubu Island) has already installed and is using 4 Urine Diverting pedestals on a campsite located at a historic site. As these have been build in a very shallow area and as they are used by a broad public the problems arising are and will be very different than those of project households using them privately. For an improvement of the systems and a proper evaluation on adequacy of Ecological Sanitation in Botswana also these sites should be monitored within the Missing Link activities. Technical assistance and support to this and other communities should be offered, if necessary.

This is to show that generally there is a request for an improved and sustainable integrated management of local resources with small-scale impact first at household and individual level and later at community/national level.

The tasks ahead are very challenging!

Recommendations

1. In line with recommendations of the Phase 1 - final report it is recommended that during Phase 2 additional means be developed to avoid dropouts and delays especially due to the drought relief programme (e.g. experience had through the production workshop organised in the Hanahais should be repeated if and when necessary).

2. It is recommended that possible delays linked to the aspect of “self-help” are acknowledged and accepted and not “punished”, as this is the aspect that should more than anything else contribute to ownership of the project thus increase chances of sustainability (e.g. construction of the superstructure of some of the toilets being delayed in some households, mainly due to financial constraints).
3. It is recommended that the 7 households starting with the piloting of Ecological Sanitation systems apply different methodologies of collection of the by-products (e.g. urine: soak pit/container; faecal matter: heap/container) and that the by-products are set-aside after a short period max. 3-6 months so that first results can be achieved and compared in a relatively short time and possibly by the end of 2003.
4. Communities/participating households are slowly starting to identify priorities (e.g. water management in Paje), it is recommended that the project takes on board these indications and shapes activities accordingly. These indications will be particularly important when developing the CEAP!

4. Financial Report

Fehler! Keine gültige Verknüpfung.

Annexes



Annex a) Phase 2: Main Tasks to be carried-out (status up-date Dec. 02)

Annex b) Phase 2: Time chart

Annex c) Monitoring Tools 1

Annex d) Monitoring tools 2: Planned activities and progress (status up-date Dec. 02)

Annex e) Brief general evaluation of achievements

Annex f) Minutes of the third Reference Group meeting

Annex g) Abstract submitted for the II International Symposium on Ecological Sanitation

Annex X) HH characteristics (to be add only to the reports January-June 2003, 2004 and the final report of Phase 2)

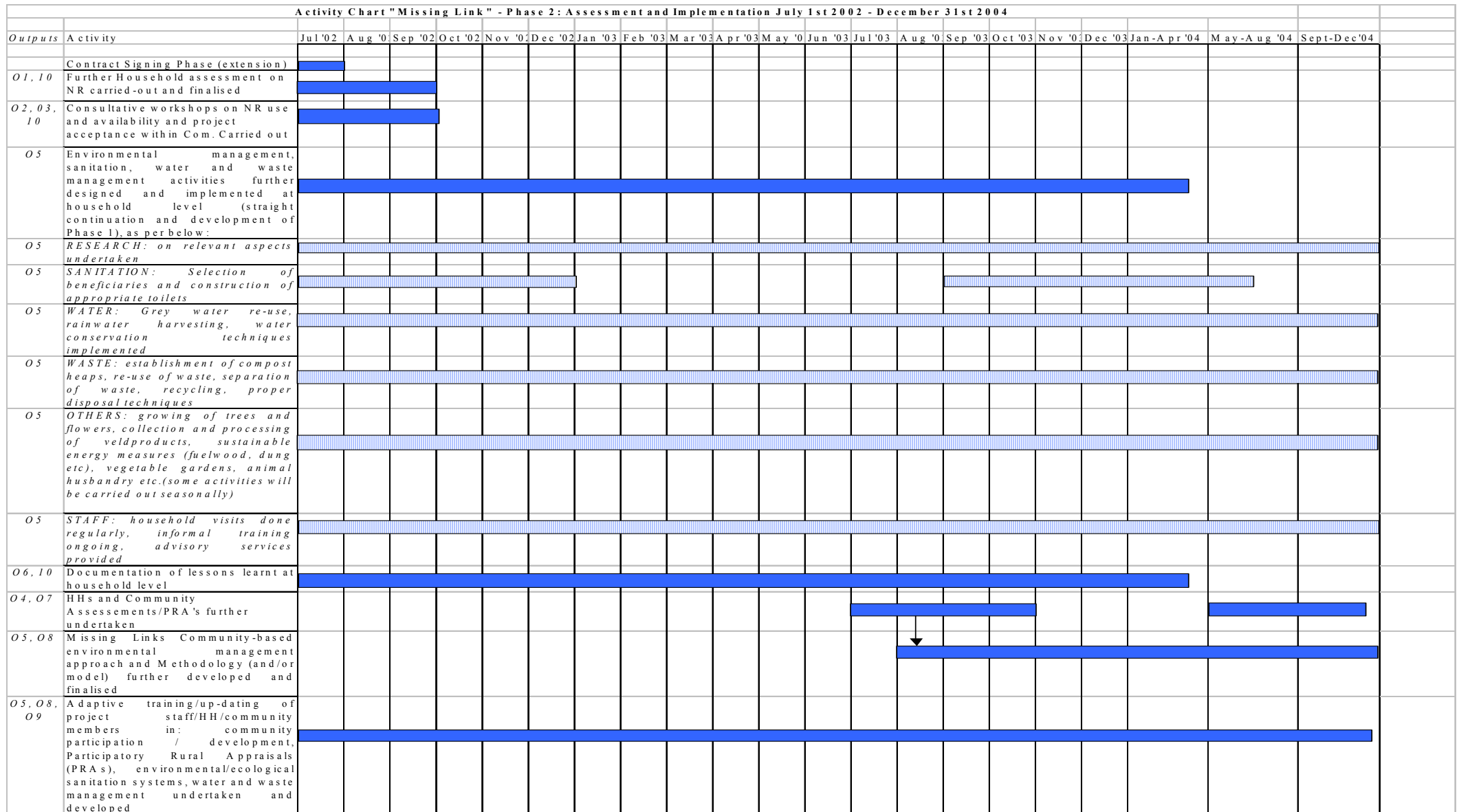
Annex a) Phase 2: Main Tasks to be carried-out (status up-date Dec.02)
(as per GTZ contract Phase 2, Terms of Reference page 4 chapter on “Scope of Work”)

1	Incorporate possible comments and recommendations from GTZ (based on the final report of phase 1) into the project execution strategy phase 2	<i>N/A</i>
2	Further Design and implement environmental management, sanitation, water and waste management activities at household/community level	<i>on going</i>
3	Further undertake and document household (HH) and community assessments (PRAs) in selected communities	<i>HH assessments: ongoing; Community PRA to be held in 2003</i>
4	Undertake research in relevant fields (e.g. PRAs, water conservation, waste management, ecological sanitation, community environmental action plan design etc.)	<i>on going</i>
5	Undertake research on Natural Resources availability and uses (IKS)	<i>to be held in 2003</i>
6	Undertake adaptive training/up-dating of project staff/HH/community members in relevant fields (e.g. community participation / development, Participatory Rural Appraisals (PRAs), environmental/ecological sanitation systems, water and waste management, CEAP etc.)	<i>on going</i>
7	Further develop, test, demonstrate and document Community-based environmental management approach and methodology (including sanitation, water, waste and natural resources management) at household and later community level. End 2004, at least 50% of the households in each selected community are motivated to be actively involved in a broader extension programme; some elements of the described, tested and demonstrated approach are already introduced in these households	<i>on going</i>
8	Develop and apply environmental /Natural Resource Monitoring tools	<i>to be done 2003-2004</i>
9	Study and assess environmental attitudes and practices, including the social acceptance levels for the use of sanitation by-products and their contribution to increased food security at household and community level	<i>to be done 2003-2004</i>
10	Design and implement Community Environmental Action Plan CEAPs	<i>to be done 2003-2004</i>
11	Publish results of assessment studies and other relevant research	<i>on going</i>
12	Carry out a mid-term project evaluation middle 2003, accompanied by an external evaluation	<i>to be done 2003</i>
13	Participation in the II ecosan Symposium, organised for April 2003 in Luebeck, Germany	<i>on going (see attached abstract)</i>
14	Develop project implementation plan for Phase 3 - Advocacy and Capacity Building	<i>to be done 2004</i>
15	Reporting, as required by GTZ HQ and in communication with the supraregional GTZ-ecosan project	<i>on going</i>

(see also Activity Chart)

Annex b) Phase 2: Time Chart

(including issues raised during the planning workshop 2002 and in the GTZ contract for Phase 2)



Fehler! Keine gültige Verknüpfung.

Annex c) Monitoring Tools 1**OBJECTIVES AND INTENDED RESULTS:**

The main aim of the Missing Link project is to:

“Develop, test and demonstrate a holistic / integrated approach to CBNRM and environmental management, sanitation and waste management at individual household and community level in selected communities in Central and Ghanzi Districts”

Coordinating Organisation: IUCN

Implementing Organisation: PTB, IUCN

Donor Organisation: GTZ, DED

Estimated total project duration: 01/05/2001 – 30/04/2006

Phase 1: 01/05/01 - 30/06/02

Phase 2: 01/07/02 – 31/12/04

Phase 3: 01/01/05 – 30/04/06

The objectives and intended results under the project are as below:

The Overall Objective of Phase II is to: “*address a long-term environmental strategy aimed at households appreciating innovative approaches of utilising their environment in an integrated and sustainable manner*”.

<p><u>Objective 1:</u></p> <p>Past and present utilisation of natural resources and environmental management, waste management and sanitation practices at household and community level documented.</p>	<p>Success criteria:</p> <ul style="list-style-type: none"> • attitudes and behavioural practices re sanitation and waste management for translation into change options and applications assessed • collective community memory on environmental practices and indigenous knowledge captured • communities enabled to better understand the context within which they work and the link between sustainable natural resources management and their own development • n. of HH/community members interviewed
Intended Results	
<p>1.1 Past and present NRM and sanitation practices studied, analysed and documented</p> <p>1.2 Attitudes and behavioural practices re sanitation & waste management assessed, studied and translated into change options and applications</p>	
Risks and Assumptions	
<p>Risks</p> <ul style="list-style-type: none"> • Lack of interest due to lack of immediate financial incentives. • Drought and other natural calamities <p>Assumptions</p> <ul style="list-style-type: none"> • Household and community members have collective memory to record past environmental practices and indigenous knowledge systems (IKS) 	

- Waste and sanitation are issues that need to be addressed within the communities
- Household and Community members air their views in an open and frank manner

Objective 2:

Participatory and sustainable environmental management approach at **household level** developed and piloted (through the design and implementation of a household extension programme which includes addressing waste management and sanitation issues)

Success criteria:

- problem areas and resources available in and around the Households/community identified
- participatory process of planning with households through the involvement in identifying needs and priorities facilitated
- HH ownership and understanding of the project increased
- Households re-empowered to control and manage NR in a sustainable manner
- HH/community knowledge, skills enhanced and positive attitudes towards CBNRM encouraged
- Long-term sustainable environmental management approaches developed by encouraging participation under the banner of self-help.
- Quality of life at HH level improved
- Health conditions of HH enhanced through improved sanitation practices
- N. of HH effectively acting towards improved livelihoods
- Lessons learnt out of HH activities identified and developed

Intended Results

2.1 Approach and methodology documented

2.2 Household extension programmes developed and implemented

2.3 Monitoring of HH actively involved in programme implementation undertaken

Risks and Assumptions

Risks

- Lack of interest due to lack of immediate financial incentives.
- Drought and other natural calamities
- Lack of a step-by-step process to achieve HH/community participation and ownership
- Current practices are too firmly entrenched for them to change

Assumptions

- Env. management activities are issues that need to be addressed within the HH/communities
- That households will integrate learning into day-to-day practice.

Objective 3:

To develop and pilot an environmental management approach at **community level** (through the design and implementation of a community environmental action plans - by end of Phase II)

Success criteria:

- participatory process of planning with the community facilitated
- Community ownership and understanding of the project increased
- Communities re-empowered to control and manage NR in a sustainable manner
- Community knowledge, skills enhanced and positive attitudes towards CBNRM encouraged
- Long-term sustainable environmental management approaches developed by encouraging participation under the banner of

	self-help. <ul style="list-style-type: none"> • Quality of life at community level improved • N. of HH involved in the CEAP (at least 50% in each comm..) • Lessons learnt at HH level translated into CEAP
Intended Results	
3.1 Approach and methodology documented	
3.2 Community environmental action programmes/plans developed and implemented (minimum 5 community activities per village undertaken over the project period)	
3.3 Monitoring of Communities actively involved in programme implementation undertaken	
Risks and Assumptions	
Risks <ul style="list-style-type: none"> • Lack of interest due to lack of immediate financial incentives. • Drought and other natural calamities • Lack of a step-by-step process to achieve HH/community participation and ownership • Current practices are too firmly entrenched for them to change 	
Assumptions <ul style="list-style-type: none"> • Env. management activities are issues that need to be addressed within the HH/communities • People actively participate in PRAs and understand relevance of PRAs in pursuing improved quality of life in the long term • Households will integrate learning into day-to-day practice. • Community members are interested into translating HH achievements into Community actions • Community will be involved and will participate in implementing action plans • Community leadership actively supports the project 	

During Phase 2 (second-half of 2003) a mid-term evaluation by external consultants (tentatively GTZ, DED, WSP, SIDA etc.) will be carried out.

Towards the end of Phase 2, an accurate planning of Phase 3 “Advocacy and Capacity Building” (objective 4) will also have to be undertaken and funding will have to be secured.

<u>Objective 4:</u> To impart project approach, methodology and experience, and build related capacity of relevant institutions and extension staff in CBNRM, environmental management, environmental sanitation and waste management - mainly Phase III	Success criteria: <ul style="list-style-type: none"> • current methods of environmental management improved • acceptance of the management methodologies increased • training material for capacity building in environmental management developed • lessons learnt identified and documented
Intended Results	
4.1 Develop and publish manual	
4.2 Training workshops held (4)	

Risks and Assumptions

Risks

- Lack of liaison with other government and non-governmental agencies
-

Assumptions

- Institutions and staff keen to learn from experiences.
- Appropriate research methods developed
- Appropriate resources mobilised for the reporting and editing

Annex d) Monitoring Tools 2: Planned activities and progress (status up-date Dec.02)*(some of the activities have started/been concluded during Phase 1)*

Activity progress	
✓	<i>accomplished</i>
-	<i>on going</i>
	<i>not yet started</i>

1.1 Past and present NRM and sanitation practices studied, analysed and documented

Activity	Inputs	2001	2002	2003	2004
HH and community assessments re past and present NRM and sanitation practices undertaken	Questionnaire and report produced and circulated	✓	-		
Consultative workshop on current knowledge of NR use and conservation carried out (e.g. IKS analysis)	Workshop held in Hanahais and Paje				
	Workshop report produced and published				
Community assessments undertaken	PRA tools and methods designed				
	PRA report produced				
Further research on NR use and availability undertaken	Report produced				

1.2 Attitudes and behavioural practices re sanitation & waste management assessed, studied and translated into change options and applications

Activity	Inputs	2001	2002	2003	2004
HH assessments on environmental attitudes undertaken	Questionnaire developed and HH interviews undertaken.	✓	✓		
	Assessment report produced		-		
Attitudinal study re Sanitation at HH level undertaken	Assessment report produced				

Environmental management practices and attitudinal study re Sanitation at community level assessed	PRA tools and methods designed				
	PRA held				
	PRA report produced				
Environmental baseline assessments undertaken	Report produced				

Under Result area “2. Participatory and sustainable environmental management approach at household level through the design and implementation of a Household extension programme which includes addressing waste mgmt and sanitation issues developed and piloted” several cross-cutting activities will have to be undertaken:

Activity	Inputs	2001	2002	2003	2004
Validate the initial consultation process towards increased HH ownership	HH workshop on project acceptance held		-		
	Workshop report produced		-		
Household food security and incomes improved by looking to income generated (in goods or money)	Economic-Environmental impact assessed through HH monitoring of activities				
	Evaluation report produced				
Household activities monitored and documented	Progress reports on visits to the HH/communities and activities undertaken written		-		
	HH monitoring tools developed and used		-		

2.1 Approach and methodology documented

Activity	Inputs	2001	2002	2003	2004
Community-based environmental management approach and Methodology (and/or model) including sanitation and waste management at household levels further developed and improved	Reports/publication on: project approach, methodology and results achieved at HH level, produced		-		
Study and assessment of the applicability of various environmental sanitation designs, methods and techniques undertaken and finalised	Report produced	✓			

Lessons learnt identified and documented	LL from HH experiences identified and documented for the integration into the CEAP				
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2.2 Household extension programmes developed and implemented

Activity	Inputs	2001	2002	2003	2004
Environmental management, sanitation, water, waste and natural resource management activities designed, tested, implemented and monitored at household level	Env. Management activities designed and HH activities started towards a CEAP		-		
	Piloting activities of Eco-San systems started		-		
Whilst introducing eco-sanitation principles and sensitise the households to the use of dry/composted matters, identify the most suitable ecological sanitation system to be piloted and start a limited but relevant number of activities.	Piloting activities of Eco-San systems undertaken		-		
	3 UD Paje, 2 UD East Hanahai, 2 UD West Hanahai.		✓		
	Acceptance level for the use of by-products established				
HH extension and activity programme continued, reviewed and finalised	HH activities proceeding independently		-		
	HH activities monitored and documented through progress reports		-		
Development of natural resource based income generating activities and those related to the re-use of wastes identified and facilitated	Research on relevant issues (water, waste, sanitation, natural resources etc) further undertaken and report produced	✓	-		
	Water: grey water re-use, water harvesting and conservation techniques put in place		-		
	Waste: compost heaps, waste re-use, separation, recycling, disposal techniques put in place		-		
	Sanitation: facilities built, use and re-use of by-products assessed, and number of volunteers		-		

	participating assessed				
	Others: growing activities, harvesting and processing of veldproducts, sustainable energy measures (fuelwood, dung etc), vegetable gardens, animal husbandry etc. (some activities will be carried out seasonally) etc		-		
Natural resources most suitable to be managed in an environmental friendly way towards income generation and food security improvement identified and relevant activities started	Community Workshop organised and report produced				
	NR management activities undertaken				
Limited number of environmental management, waste management and sanitation facilities and activities started by the end of Phase I (at least 10 HH in each village actively involved in extension programme before the CEAP)	11 HHs Paje, 5 HHs East Hanahai, 5 HHs West Hanahai. Activities started as per "activity sheet"	✓	✓		

3.1 Approach and methodology documented - by end of Phase II

Activity	Inputs	2001	2002	2003	2004
Community-based environmental management approach and Methodology (and/or model) including sanitation and waste management at community levels further developed and improved	Reports/publication on: project approach, methodology and results achieved at community level, produced				
Lessons learnt identified and documented	LL from the CEAP identified and documented				

3.2 Community environmental action plans developed and implemented (minimum 5 community activities per village over project period) - by end of Phase II

Activity	Inputs	2001	2002	2003	2004
Validate the initial consultation process towards increased community ownership (before CEAP)	PRA workshop on project acceptance held				
	Workshop report produced				
	Evaluation of activities undertaken at HH level done				

Community Environmental Action Plans designed	Community meetings held				
	CEAP plan produced				
Community training on project management undertaken	Training sessions held and reports produced				
CEAPs managed and implemented	Activities documented and monitored through progress reports				

3.3 Monitoring of Communities actively involved in programme implementation - by end of Phase II

Activity	Inputs	2001	2002	2003	2004
CEAP activities monitored and documented	Participatory HH and CEAP monitoring tools developed and applied				
	Env./NR monitoring tools developed and applied				
	Progress reports on visits to the communities and activities undertaken produced				
Community food security and incomes improved by looking to income generated (in goods or money)	Economic-Environmental impact assessed through monitoring of community activities				

INDICATIVE ACTIVITIES OF THE MISSING LINK PROJECT – PHASE 3 “ADVOCACY AND CAPACITY BUILDING”

4.1 Develop and publish manual - by end of Phase III

Activity	Inputs	2003	2004	2005	2006
Training-Implementation manual for application in other situations / communities developed	Training Manual published				

4.2 Training workshops (4) - by end of Phase III

Activity	Inputs	2001	2002	2003	2004	2005	2006
Adaptive training of project staff, HH, community members in environmental sanitation, waste management, water management, PRA and other relevant knowledge and skills accomplished	Workshop proceedings/reports produced	✓	✓				
	Exchange visits organised		✓				
CBNRM service providers (GoB extension staff and NGOs) trained	Workshop reports produced						

EFFECTS/IMPACTS NOT DIRECTLY UNDER THE INFLUENCE OF THE MISSING LINK PROJECT BUT IMPORTANT FOR IT:

Event	Effects/Impact	Remarks	Period of event
Piloted UD-System set-up on Lekhubu (4 UD Toilets build and used)	No time for proper piloting of the systems before being used outside pilot communities. Advocacy and capacity building related to Eco-San in Botswana prematurely started.	Although outside the ML project communities, the Systems on Lekhubu will have to be monitored and evaluated by ML staff.	2002
Several requests for UD systems informally received		To be monitored and evaluated	

Annex e) Brief General Evaluation of achievements

<i>Result 1. To document past and present utilisation of natural resources and environmental management, waste management and sanitation practices at household and community level in the identified communities.</i>	
Indicator	Achievement
Past and present NRM and sanitation practices studied, analysed and documented	HH and community assessments undertaken. Aspects taken into account and included into project activities: Water, Waste, Sanitation, Natural Resources, Social and Economic aspects as seen by community members, Infrastructure, health etc. Assessments have exclusively been done through the interview of HHs and other community members. A more detailed analysis of past and present NRM will be undertaken during the IKS workshop and study, in parallel to all the other activities
Attitudes and behavioural practices re sanitation & waste mgmt assessed, studied and translated into change options and applications	The results of the assessments have been taken on board for the activities started with participating HH. Further assessments will be undertaken during project implementation and whilst preparing for the CEAP
<i>Result 2. To develop and pilot a participatory and sustainable environmental management approach at homestead / household level through the design and implementation of a homestead extension programme which includes addressing waste mgmt and sanitation issues.</i>	
Indicator	Achievement
Approach and methodology documented	An approach and methodology document is being prepared and should be finalised soon
Homestead extension programmes developed and implemented	HH activities started
At least 10 households in each village actively involved in extension programme	20 Households are actively participating in the first activities started off. More community members have been encouraged to start off activities without financial support from the project but with full availability of project staff for technical backstopping.
<i>Result 3. To develop and pilot an environmental management approach at community level through the design and implementation of a community environmental action programme</i>	
Indicator	Achievement
Approach and methodology documented	2 nd half of Phase 2
Community environmental action programmes developed and implemented (minimum 5 community activities per village over project period)	2 nd half of Phase 2
Communities actively involved in programme implementation	2 nd half of Phase 2
<i>4. To impart project approach, methodology and experience, and build related capacity of relevant institutions and extension staff in CBNRM, environmental management, environmental sanitation and waste management</i>	
Indicator	Achievement
Staff Capacity Building	Training workshops held, adaptive training to be continued
HH and community capacity building	Training workshops held, adaptive training to be continued
Develop and publish manual	Phase 3
Training workshops on the specific project experiences (4)	Phase 3

Annex f) Minutes of the Third Reference Group Meeting

THIRD REFERENCE GROUP MEETING
20TH NOVEMBER 2002
VENUE: BOARDROOM DSWM, GABORONE

Agenda

- 1) Welcome remarks by chairperson
- 2) Minutes of the first RG meeting (21/11/01) and workplan Phase 2 (March 02)
- 3) Presentation of the final report of Phase 1.
- 4) Up-date on the Status of the project and activities to be implemented next.
- 5) Presentation of monitoring tools developed for Phase 2
- 6) Others of interest
- 7) Definition of a date for the next group meeting

Present:

Mr M. Ben	ARB
Mr S. Pathmanathan	DSWM - chair
Ms R.N. Molao Chikanda	Institute of Waste Management
Mr M.P. Tebele	Institute of Waste Management
Mr C. Joseph	Institute of Waste Management
Ms L. Moalosi	Min. of Health
Ms C. Wirbelauer	IUCN – Secretariat/Proj. Coordinator
Ms M. Madzwamuse	IUCN
Mr M. Keerate	Permaculture Trust Botswana (PTB)
Mr M. Pelokgosi	Permaculture Trust Botswana (PTB)/CLO Paje
Mr B.J. Mogotsi	Somarelang Tikologo
Mr A. Fritz	Somarelang Tikologo
Mr C. Little	SMEC
Ms G.B. Sekgororoane	University of Botswana

Apologies:

Mr C. de Wolf	DED
Mr K.A. Selotlegeng	DSWM
Mr D. Makwati	PTB/Supervisor Gantsi
Ms G.D. Ndaba	PTB/Supervisor Serowe
Mr N. Mudge	SMEC

1) Welcome and introduction

The participants introduced themselves and the Chairman welcomed everybody to the third “CBNRM-Missing Link” Reference Group meeting. Besides Reference Group members one observer was introduced, Mr C. Little from SMEC. In fact, the chairman explained that since beginning of 2002 SMEC has been working on the development of the “National Master Plan on Waste, Water and Sanitation” for the DSWM. As this project is piloting activities also in the area of sanitation, waste and water management the chairman mentioned the importance of collaborating and joining efforts. The Missing Link should be considered as a pilot within the Master Plan development process. The chairman continued by emphasising how important it is to cover the “Missing Links” in the case of the project these being related to again the aspects of small scale water and waste management, and sanitation within CBNRM but also the Missing Link between the benefits that can be accrued at community level and the trickling down of these to a Household level. Although the project is very small compared to other National Programmes such as the National Rural Sanitation programme (meant to install 22.000 on-site sanitation units by the end of NDP8 – 19.000 units have been set-up already) it could give new options to on-site sanitation, thus efforts should be joint.

2) Minutes of the first RG meeting (21/11/01) and workplan Phase 2 (March 02)

The Project Coordinator mentioned the most important aspects of the minutes of the first reference group meeting and explained that, in particular regarding suggestions that came up during the meeting the following had been done:

Within the research, which is taking place in the communities, it was suggested that information’s available through this years Census are collected and inserted in the studies on the involved communities: information from the CENSUS will be included in the community assessment document that is being prepared.

Regarding Ecological Sanitation systems, similar systems have been noticed in Orapa and Moruapule as well as around the Francistown area. The City Council could be of help and a visit or collection of information on the systems in use in those areas could be useful: The visit to interesting areas of Botswana hasn’t been excluded. During the month of April 2002 though it was felt more important to organise and undertake a study-tour to Eco-San projects in South Africa. A study-tour to local on-site sanitation systems will be considered at a later stage.

The minutes were unanimously approved.

The Project Coordinator continued by presenting the Workplan developed through the stakeholder workshop in March 2002. As the plan is very detailed and had already been circulated to all the participants and as no comments nor suggestions had been submitted, the Reference Group approved the workplan unanimously.

3) Presentation of the final report of Phase 1.

Copies of the Final report of Phase 1 were distributed. As the document is relatively big and as it has already been approved by GTZ (donor) no changes can be made. The Project Coordinator though encouraged to comment on it so to be able to keep in mind the comments for the next reports.

The Project Coordinator also informed the RG that for all the reports of Phase 2 comments and suggestions as well as an approval from the RG will be necessary. Draft Reports will be circulated to everybody by email. Reports are due every 6 months starting from July 2002 with the following schedule:

July-Dec. 2002; Jan-June 2003; July-Dec 2003; Jan-June 2004, Jul-Dec 2004.

All the reports have to be submitted by latest 30 days after the end of the reporting time, except for the Final report of Phase 2, to be submitted by the end of March 2005.

The RG agreed on giving inputs on the reports.

The RG finally suggested that the next reports include a financial analysis (e.g. detailed cost of activities/facilities).

In order to be able to better evaluate the project and to give an adequate input the RG requested copies of the Terms of Reference for Phase 2. These could be circulated together with the minutes.

4) Up-date on the Status of the project and activities to be implemented next.

The Project Coordinator and the CLO (Community Liason Officer) from Paje reported on major activities undertaken since the first RG meeting in 2001, activities undertaken during the first months of Phase 2 and planned activities.

Summary of activities of Phase 1:

- Mobilisation and general organisational aspects finalised
- Identification of Households (HH) (5 in East Hanahai, 5 in West Hanahai and 10 in Paje)
- Series of meetings first with community members and households, then with all households and finally with individual households have been carried out to explain all the aspects of the project and mobilise communities/households (HH).
- Strategic training of project staff and HH/community members in: Ecological Sanitation; Waste Management; Water Harvesting and others has been undertaken. The Ecological Sanitation training included a one-week study tour to projects in South Africa.
- Start-off of basic household activities such as: backyard gardening, planting of trees and waste collection.

Phase 1 also included a Planning workshop for Phase 2: 19 participants representing the communities, Government, NGOs and other stakeholders attended.

Towards the end of Phase 1 the uncertainty of receiving funds for Phase 2 has delayed activities and very little has happened between April and August 2002.

Generally though activities planned for Phase 1 were undertaken as scheduled.

Phase 2*(Period: 1st July 2002 – 31st December 2004)*Activities undertaken between July and November 2002

The real start of Phase 2 has only been in August 2002, when availability of funds was confirmed by GTZ.

Since then 6 Urine-diverting Ecological Sanitation systems have been build (3 in the Hanahai's and 3 in Paje). These should be fully operational by latest beginning of January 2003.

During the month of October-November 2002 and just before the rains, water harvesting workshops have been held in all three communities and basic water harvesting/recycling techniques have been put in place in some of the homesteads in the Hanahais and in Paje. Some Waste separation and compost heaps have been started. Furthermore Households are continuing the gardening activities.

In the Hanahais a 3-days production workshop for HH and community members has been held. During the workshop Community members visited different HH and were encouraged to collect waste, set-up the water harvesting systems, prepare the compost heaps etc. Furthermore adaptive training has continued through the attendance of one supervisor to a two-weeks training course on Ecological Sanitation organised and sponsored by SIDA in South Africa and the attendance of one CLO to a training course on Participatory approaches organised and funded by CORDE.

Finally monitoring tools for Phase 2 have been developed and a document on project approach and methodologies is being finalised.

Problems encountered in the last months:

- Delays in receiving funds for Phase 2
- As already noticed in 2001 from November to February/March some activities slow down because of the ploughing season.
- Especially in the Hanahais, although participants are committed, many of them are in involved in the drought relief programme.

A draft report covering the period from July 2002 – December 2002 will be circulated amongst Reference Group members in early January 2003 for comments and approval. The approved report will have to be submitted to GTZ by January 31st 2003.

Activities to be undertaken in the next coming months (see also activity chart)

In the next few months the main focus should be on improving and monitoring activities started-off between April and November 2002 (e.g. Water harvesting/conservation/re-use improved; Backyard gardening extended; Waste collection/separation improved; Ecological Sanitation systems tested and provided to other participating Households; Fencing problem addressed through natural fencing systems etc.)

Other relevant activities will include:

- Once HH have started internalising activities related to backyard gardening, waste, water and sanitation, activities related to veld products will have to be initiated through: consultative workshop on IKS organised in the communities,

resources availability identified and NR suitable for further management at HH level identified.

- Document on Approach and Methodologies; and Household/Community assessment finalised and printed
- Social acceptance levels for the use of Sanitation by-products to be established in the next few months.
- Finally and in preparation to the International Symposium on Ecological Sanitation to be held in April 2003 in Germany a Paper on “Lessons Learnt on Ecological Sanitation in Southern Africa” will be finalised and presented.

Some RG members raised some questions, in particular:

Whether, a part from all the successes, some problems had been faced.

The Project Coordinator explained that major problems were linked to the uncertainty to receive further funding after the end of Phase 1 (which slowed down activities with the risk of de-motivating participants); as already noticed in 2001 from November to February/March some activities slow down because of the ploughing season. Furthermore and especially in the Hanahais, although participants are committed, many of them are involved in the drought relief programme which also slows down activities. Finally whilst setting-up the backyard gardens problems related to unfenced gardens came up, with most of the seedlings being eaten by the animals around the houses (goats, chicken, birds etc).

The chairman emphasised on the need to collaborate for the successful implementation of the “Missing Link” project. He continued mentioning that as the size of the villages is of circa 400-700 Habitants these are considered tertiary villages, which are generally not very well covered by national Programmes. The chairman encouraged expanding activities in these villages, as far as possible.

One RG member asked what kind of toilets are already in use in the villages and what systems do the involved HH use/have.

In Paje only 4 of the involved HH have old Pit latrines the other HH don't have any facility; in the Hanahais, a part from Pit latrines at the school, none of the participating HH has a toilet. Finally in Paje only very few have tap water, all the others (incl. all the families in the Hanahais) use water from communal taps.

Has a feasibility study on possible environmental impact from the toilets especially to groundwater been carried out?

The Project Coordinator explained that the UD-Ecological Sanitation systems that are being build within the project are all sealed and as such do not pollute groundwater resources (one of the reason why in particular these systems were introduced). Furthermore regarding the use of by-products particular procedures will have to be followed before these can be used safely. Finally HH are encouraged to wash their hands after using the toilet.

One of the members informed the group that similar systems have been set-up in peri-urban areas of Durban. He mentioned that in the peri-urban areas of Durban the municipality had started with waterborne systems that turned out to be unsustainable in the long term. They are now transforming those systems into UD and Composting systems. The positive and innovative aspect though is that the sanitation programme carried out by the municipality also includes a lot of education and awareness raising

on these systems, which is considered to be a crucial aspect for the acceptance of Ecological Sanitation systems.

5) Presentation of monitoring tools developed for Phase 2

The Project Coordinator distributed copies of the monitoring tools developed during the first months of Phase 2. She explained that they are divided in two documents. The first summarises Objectives and intended results by linking them to success criteria and Risks and assumptions.

The second document contains detailed activities, inputs and timeframe for each result. As an activity can contribute to more than one result some activities might be mentioned more than once. Regarding the time frame, black areas indicate the planned period of activity whereas ✓; -; ; indicate the status of activity.

The Reference Group was invited to submit comments (by email) by latest November 30, 2002.

As the documents contain some abbreviations the group requested a list of abbreviations that was circulated by email immediately after the meeting (and attached).

6) Others of interest

The chairman invited the members to bring up other issues.

2 points were raised by the Proj. Coordinator who started by presenting a poster produced within the project.

The Proj. Coordinator also informed the group that she has been invited to make a presentation at the Second International Symposium on Ecological Sanitation which will take place in Luebeck, Germany, from the 7th-11th of April 2003 (for details on the Symposium see web site <http://www.gtz.de/ecosan>). The abstract presented by the project coordinator in collaboration with colleagues from Mozambique, South Africa and Zimbabwe coordinating similar projects is entitled: “Lessons Learnt on Eco-San in Southern Africa – Towards Closed-Loop Sanitation?”

7) Definition date for the next reference group meeting

It was suggested that the next Reference Group meeting takes place in early June 2003 so that comments on the draft report for the period January-June 2003 can be collected and discussed together (dates to be confirmed in 2003).

The Chairman closed the meeting by thanking all the participants for their inputs and commitment.

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Annex g) Abstract submitted for the II International Symposium on Ecological Sanitation

**LESSONS LEARNT ON ECO-SAN IN SOUTHERN AFRICA – TOWARDS
CLOSED-LOOP SANITATION?**

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1 INTRODUCTION

In Botswana, and other Southern African countries, the drawbacks of inappropriate waste-water management are very severe. In peri-urban and rural areas, water resources are often limited and waterborne sanitation systems unavailable. The poorer segments amongst a rapidly growing population cannot afford conventional sewage systems and existing approaches to wastewater management and sanitation have become largely non-viable. In response, in the late nineties, following the example of some Ecological Sanitation (Eco-San) projects around the world a number of activities also started in Southern Africa. Since then, several projects have been implemented in South Africa, Mozambique and Zimbabwe. The paper presents a short analysis of experiences gained in Eco-San, with an emphasis on closed-loop systems, in an attempt to draw lessons learnt from the Region.

2 METHODS

Although the priority of most of the Eco-San projects that started in the Region was to address sanitation and health problems, the developments have been manifold and results are very different. Only very few, if at all, were directly linked to the idea of closed-loop-sanitation: why? which processes are driving these projects? what are some of the aspects to be kept in mind for a successful implementation of Eco-San projects in the Region? is this a solution to sustainable sanitation in Southern Africa etc.? These are only some of the questions we have asked ourselves in compiling lessons learnt. The methodology used for the development of “Lessons learnt on Ecological Sanitation in Southern Africa” has been a simple analysis of ongoing and concluded pilot-projects in the Region. With the support of project coordinators in those countries it was possible to identify differences and similarities in the initiation of projects, success stories, problems encountered and lessons learnt.

¹With contributions from Aussie Austin (CSIR, South Africa) and Richard Holden (Mvula Trust, South Africa).

3 RESULTS

Although most of the Eco-San projects started-off in an attempt to address Sanitation/Health problems only, by introducing Eco-San systems a much broader impact on general environmental management can be achieved such as: water conservation through the use of dry systems; groundwater pollution control; improved fertilisation and soil conditioning for agricultural purposes through a closed-loop-approach etc.. Eco-san has proved to be efficient especially in rocky areas and high groundwater table areas (avoiding environmental and water pollution). Generally, Eco-San systems were positively received in all the projects mostly because compared to pit latrines or no sanitation at all they were considered to be user friendly, easy to maintain and “private”. However, the response to the different systems available in these countries has not been the same but was depending on household expectations, availability of space, living conditions and results are therefore very different. For example, in peri-urban areas of Zimbabwe and densely populated areas of Mozambique, the Fossa Alterna system are preferred to Urine Diversion (UD) systems, whereas in rural areas of South Africa UD-systems were preferred. In Zimbabwe, Arbor loo systems have been well received in rural areas (at the fields) but rejected in more populated areas. In the cases of closed-loop systems, it was observed that the use of by-products (when acceptable) was applied mainly to crops and trees (eg. maize, beans, flowers, sunflowers, fruit trees etc.) and less to vegetable growing. It was also noticed that a successful Eco-San project (whether looking at closed-loop or not) needs to go together with awareness raising and capacity building and with adequate and intensive social interventions. Households should be fully involved in the process; they should be able to choose the most suitable and affordable system for themselves. Community structures and leadership need to be respected; too often lack of political will has been constraining the development of Eco-San projects. In general, when starting an Eco-San project a lot of time and patience need to be applied!

4 CONCLUSIONS

Since 1997, when the first compost latrines and UD systems were introduced in the Region, some progress towards closed-loop sanitation has been made. Research on safe handling and re-use of by-products has been undertaken and is already informing the projects in Mozambique, South Africa, Zimbabwe and the pilot in Botswana. Although users have to manipulate urine and faecal matter, often considered a taboo and dirty, households are slowly starting to see the advantages of Eco-San and the systems are becoming more and more accepted. Even though Eco-San is still very young in the Region it seems to be a suitable option to address sanitation and environmental concerns, but there is still a long way to go before the loops will be closing in Southern Africa.

It is hoped that the lessons learnt outlined in this paper will be useful to inform any new Eco-San project in the Region and beyond.

Abbreviations

CBNRM	Community Based Natural Resource Management
CEAP	Community Environmental Action Plan
CLO	Community Liaison Officer
DED	German Development Service
Eco-San	Ecological Sanitation
GoB	Government of Botswana
GTZ	German Technical Advisory Service
HH	Households
IKS	Indigenous knowledge systems
IUCN	The World Conservation Union
LL	Lessons Learnt
ML	Missing Link
NGO	Non-Governmental Organisation
NR/M	Natural Resource/ Management
PRA	Participatory Rural Appraisal
PTB	Permaculture Trust Botswana
SIDA	Swedish Development Agency
SMEC	Snowy Mountains Engineering Company
UD	Urine Diverting