

Report prepared for Lesotho Highlands Development Authority



LESOTHO HIGHLANDS WATER PROJECT



REPORT 49

Report prepared by Panel of Environmental Experts

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EXECUTIVE SUMMARY

1. The Panel of Environmental Experts (PoE) for the Lesotho Highlands Water Project (LHWP) undertook a mission from 15 to 19 September 2007.
2. The purpose of the mission was to help develop and implement critical projects being undertaken by the Lesotho Highlands Development Authority (LHDA).
3. The critical projects addressed during the mission, and the way forward on each, were briefly as follows.

LHDA Compensation Annual Cash Compensation was delivered in timely fashion in 2008. Local Legal Entities in downstream areas number 22 in Katse, all of which have received their first tranche of communal compensation, and 27 in Mohale, which have yet to receive their first tranche of communal compensation. 17 LLEs downstream of Katse have plans for income generating projects. All of the Katse LLEs have funds invested in financial instruments. Conflicts have occurred in some of the LLEs, many of which have been resolved. Community development should be added to the options recommended to LLEs by the Technical Assistance Unit. Funds need to be released to the Mohale LLEs.

Lump Sum Investment and Operational Guidelines Different formats are used by the three Operations Branches in the preparation of Business Proposals for lump sum recipients and LLEs. The Cooperatives Section in Agriculture has its own formats. A suitable and agreed-upon format for a business proposal format is needed, one that can be implemented relatively easily by individuals and communities. POE provides an example. The current capacity of LHDA to appraise business proposals and respond in a timely way is stretched so it would be useful to expand the Technical Assistance Unit. Small-scale businesses for those receiving lump sums of less than 10,000 include poultry, vegetable and fruit production, dairying, crafts, sewing, and carpentry. POE is concerned about the adequacy of the prevailing safeguard measures in financial institutions relating to the financial instruments chosen by lump sum and LLE investors given the current worldwide financial and banking crisis and recommends looking into deposit insurance.

Income Generation/Technical Assistance Unit The business advisory services to cooperatives and communities upstream and LLEs downstream continues through the Field Operations Branches Income Generation Officers and the Technical Assistance Unit have provided useful advice and training for community members and cooperative and LLE committees. Outside assistance from a consultant under Contract 1254 has, to some extent, provided information to IGOs, TAUs, and downstream LLEs. Diversification of enterprises in each area would be useful, as would monitoring, evaluation, and sharing of lessons learned.

LHDA performance indicators LHDA is initiating a system of evaluation performance on key function areas (KFAs). The initiative is commended. Development of the system is required so that areas of weak performance, and progress over time, are obvious at a glance. This report offers guidance.

The LHDA Contract 1204 (Population and Epidemiology Study) has yet not been completed due to problems with the report on the findings. The review of the current reports still indicate that inadequacy of the reports in terms of their depth of analysis and the 'inconclusiveness' of the findings. A recommendation has been made to shore up the report by appointment of a forensic analysis expert to help the consultant to make the report more comprehensive report before it can be circulated to all stakeholders. The process should be completed by 15 November 2008.

Integrated catchment management (ICM Contract 1044) Task 2 (resource inventory) is nearing completion. Shortcomings requiring attention concern definition of grazing capacity, understanding of commercial and traditional livestock systems, and development of

appropriate rangeland and livestock interventions. Task 3 (ICM development plans) is also nearing completion. The project needs to develop implementation plans that relate land capability with land use and conservation practice with present farming, identify discrepancies, and devise the remedies in ICM implementation plans.

Lesotho Biodiversity Trust & Maloti Minnow Since the Panel's last visit in May 2007, no progress has been made with the design of a barrier on the Senqunyane River or the commissioning of an EIA study for its implementation. The matter was considered urgent then, and it has become critical now. The Panel believes the LBT is out of its depth and recommends that the Board of Trustees request the intervention of the LHWC to address this as an emergency.

Excellent work has been done in monitoring the status of the fish in the Mohale catchment and reintroduction sites. Intensive gillnetting was carried out last summer to prevent Smallmouth Yellowfish from penetrating the Senqunyane River. It is critically important that this work be continued during the summer of 2008-2009.

IFR related issues LHDA is developing an IFR release system that does not rest on pre-determined base and flood flows (the present system) but rather mimics the variation of the natural flow regime. The planned system aims to release a predetermined fraction of inflow, with a 1-day time step. The innovation is commendable and should be tested. IFR annual reporting is deficient. Reports are overdue, too long and verbose, and not focused on IFR key performance indicators. IFR flood releases are deficient in that there have been no flood releases from Mohale for the past 2 years. IFR biophysical monitoring is unsatisfactory because water quality data loggers have been vandalized without substitute data recording and write-up, and because riparian vegetation data have been collected but not analyzed and interpreted. Application of the DECISION RULES to inform possible further compensation of downstream communities is in jeopardy.

Residual Resettlement Land was allocated in two areas of Mohale to those households falling under Residual Resettlement (ones losing over 50% of their land). Approximately 28 households from 4 villages were allocated land in Nthakhane and Kolotshane. Approximately 20 households remain to be addressed under the Residual Resettlement Policy. These households will have the option of either resettling outside of Mohale or remaining in the basin. The Residual Resettlement Policy has yet to be finalized, something that is of utmost importance to meeting the LHDA Treaty obligations.

Zonation MTEC has been asked to declare the LHWP area as a 'protected landscape', one of the IUCN protected area categories. Panel regards this as a progressive development but has doubts about the feasibility of collecting entry fees to the area.

Public Health A review of policy and practices in LHDA has revealed that there is no institutional public health policy and this has adversely affected the development and growth of public health programs in LHDA. POE recommend that an immediate process of developing appropriate public health policy be undertaken before the end of the year, including the review of the current draft policy on HIV and AIDS. PoE has also identified the need for establishment of a focal point for public health to advance the implementation of program

KLM WATSAN The project had been stopped due to financial shortfalls but has now been restarted under the implementation management of LHWC on the basis of reducing costs attached to LHDA apportionment of overheads to projects as well as the slow implementation pace. Some concerns have been raised by PoE on the admissibility of LHWC directly implementing the project and explanations to the rationale behind the decision has been provided. There is urgent need to complete the project as well as reduce operational costs as there is a limited budget for the project.

Community Infrastructure The Community Infrastructure Policy and planning process were reviewed, and it was found that some progress has been achieved, especially in areas where communal compensation has been provided. Questions remain regarding responsibility for community infrastructure development among LHDA, government ministries, local

government institutions, chiefs and headmen, and community based organizations and sources of funding for community infrastructure development if communal compensation is not available.

General PoE's previous mission to Lesotho was 15 months ago in May 2007. The missions are too infrequent and too short for PoE to fulfil its role. PoE missions should be 10 days long at 6-monthly intervals (March and September). Quite as cogent, there is an impending decision on LHWP Phase 2. Go-ahead is of great import to Lesotho's economic development and living standards. LHDA's performance is a factor in the decision. There is a special urgency for LHDA to expedite tasks to the highest standards. PoE should therefore have another mission to Lesotho in December 2008.

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INTRODUCTION

The Panel of Environmental Experts (PoE) for the Lesotho Highlands Water Project (LHWP) undertook a mission from 15 to 19 September 2008. The mission was attended by Professor Bob Hitchcock and Drs Amusaa Inambao, John Ledger and Mike Mentis.

The overall objective of the Mission was to provide the Lesotho Highlands Development Authority (LHDA) with an independent evaluation of its operations, identifying where things might be going wrong, how LHDA might improve its performance, and providing guidance on best practice. The specific terms of reference (ToRs) for the Mission were as follows.

NO.	Project	Action
1	LHDA compensation	<ul style="list-style-type: none"> • Review and comment on the viability & sustainability of LLEs and performance of those established. Also advise on the effectiveness of the strategy adopted by LHDA for communities to access communal compensation and recommend corrective action as appropriate. • Review progress achieved on the auditing of compensation records & provide advice on the sustainability of the proposed methods to archive and retrieve this type of data as and when required. • Review progress of LHDA Annual Communal Compensation disbursements and pre-disbursement conditions and advice on how to overcome the bottle necks. • Review the performance of the LHDA Contract 1254 (TAU Business Development Adviser) and advice on the effectiveness of this study in meeting its intended objectives.
2	Lump sum investment & operational guidelines	<ul style="list-style-type: none"> • Review different formats used by the Operations' Branches in the preparation of Business Proposals for both lump sum applicants and LLEs' business enterprises and advise LHDA on the most suitable and adaptable format. • Review the current capacity within the LHDA to appraise business proposals and advise on its adequacy to timely respond to the community requests. • Advise on the thresholds and types of businesses that can be initiated with regard to lump sums equal or less than M10, 000.00. • Critically comment on the adequacy of the prevailing safeguard measures with regard to the financial instruments chosen by individual lump sum compensation applicants.
3	Income Generation / Technical Assistance Unit	<ul style="list-style-type: none"> • Review business advisory service offered by these units to the affected communities, specifically the types and sizes of the investments relative to the size of funding accruing from compensation covers into the community's accounts and provide advice on the strategy to improve this service and increase benefits from these investments. • Evaluate the competencies within the Technical Assistance Unit (TAU) and advice on the prospects of the unit to meet the intended objectives.

NO.	Project	Action
4	LHDA performance indicators	<ul style="list-style-type: none"> • Critically review the LHDA Performance Indicators and provide comments and advice on the roll out mechanisms to all implementing stakeholders.
5	LHDA Contract 1204 (Population & Epidemiology Impact Study)	<ul style="list-style-type: none"> • Critically review and comment on the C1204 resubmitted reports & progress made towards completion of the study. • Review the findings of Contract 1204 and advise the LHDA as to how far they reflect on the Treaty Obligations.
6	LHDA Contract 1044 (ICM)	<ul style="list-style-type: none"> • Review ICM Task 2: Resource Inventories Draft Completion Report and provide comments and recommendations.
7	Lesotho Biodiversity Trust (LBT)/Maloti Minnow	<ul style="list-style-type: none"> • Review performance of the LBT and recommend sustainable solution(s) on the minnow. • Critically review Terms of Reference prepared to conduct an EIA exercise for construction of barriers for the Maloti Minnow Conservation Project & provide comments and recommendations.
8	IFR related issues	<ul style="list-style-type: none"> • Critically review the implications of delegating IFR releases to the Dam Operators. • Critically review & provide comments on the 2004/05 & 2005/06 IFR Annual Report as prepared under LHDA Contract 1168. • Review the general IFR implementation and determine whether the IFR guidelines are being met.
9	Residual resettlement	<ul style="list-style-type: none"> • Review progress achieved under & the proposed program under Residual Resettlement and provide advice towards a speedy completion of this program.
10	LHWP Zonation – LHDA Contract 1255	<ul style="list-style-type: none"> • Critically review the feasibility of the LHDA proposal to declare the LHWP areas as part of Protected Areas and recommend the category of declaration to be used.
11	Public Health	<ul style="list-style-type: none"> • Review the adequacy of the LHDA HIV/AIDS policy and advice on areas requiring enhancement in order to align ourselves with the National Policy on HIV/Aids.
12	WATSAN program	<ul style="list-style-type: none"> • Review progress achieved by the KLM WATSAN and provide LHDA with an objective & cost effective plan to complete all outstanding KLM WATSAN activities.
13	Community infrastructure	<ul style="list-style-type: none"> • Critically review the community infrastructure plan and advice LHDA accordingly.

Each of the items of TOR is dealt with in more detail in the matrix that follows.

PoE thanks LHDA, consultants and the Lesotho Highlands Water Commission (LHWC) for help and hospitality.

CRITICAL PROJECTS

Projects	Present situation	Recommended action	Finish date
1. LHDA compensation			
	<ul style="list-style-type: none"> A review was carried out on the viability and sustainability of cooperatives and LLEs and the performance of those that have been established. In 'Muela in the Phase 1A area, there are 4 cooperatives; in Katse there are 6; and in Ha LeJone there are 17. 43 cooperatives are planned for the Phase 1B area (Mohale), and currently at least 13 have been fully established. A total of 27 LLEs have been established downstream of Mohale, 25 of which are registered. Funds have yet to be released for these LLEs. 22 LLEs have been established and registered downstream of Katse, and they have received their first tranche of communal compensation. Of the Katse downstream LLEs, 18 have projects, 6 with roller mills, 4 plan brick making, 2 are doing sewing, 2 are constructing tourist rondavels, 1 is doing a bakery, 1 a truck, 1 a business complex, and 1 a KFC enterprise. Viability of these projects has yet to be determined as they are only in their early stages. All of the Katse LLEs had invested in financial instruments including short and long-term fixed deposits and unit trusts. 6 LLEs had conflicts ranging from funds misuse and lack of committee transparency to community members seeking distribution of benefits from the investments. Conflict resolution mechanisms were applied, and most of the difficulties were resolved. Difficulties continue concerning differences between community members and LLE committees regarding what to do with the interest generated by financial investments. 	<ul style="list-style-type: none"> LLE business plans need a standardized format and a review process must be established that allows for faster turn-around. Funds should be released to Mohale LLEs. 	30 Nov 08
	<ul style="list-style-type: none"> Mohale LLEs currently engaged in 8 types of income-generating enterprises, including roller mills, brick making, and general dealerships, all of which are potentially viable if implemented effectively. At present none of the LLEs is planning to devote communal compensation funds toward development projects that have wide-ranging community benefits (e.g. schools, foot bridges, VIP toilets, electrification, erosion control, tree-planting, water systems, roads, and range management). Doing so would enhance the benefits to the full community as opposed to income generating type projects which may benefit only some of the members. This would also reduce conflicts between community members and committee members and enhance the long-term viability both of the LLEs and the communities in the downstream areas. Having these community infrastructure and development projects on the ground would demonstrate both to community members and people from outside that progress has been made in the investment of 	<ul style="list-style-type: none"> TAU and FOB staff need to recommend to LLEs that development programs should be added to the options for use of communal funds. 	31 Dec 08

	community funds. Monitoring of the LLEs' use of funds and project implementation would go a long way toward ensuring the success of these community programs.		
	<ul style="list-style-type: none"> The effectiveness of the strategy adopted by LHDA for communities to access communal compensation was reviewed. It was found that there were complications in the review process and it was taking time to get cooperatives established and registered. This is the case, for example, in Mohale. Part of the problem relates the Cooperatives section of MOA which has limited staff. In addition, income generation officers in the FOBs are stretched given their wide array of duties. LHDA is attempting to track the use of funds by LLEs and cooperatives and is pursuing legal cases against those allegedly involved in misuse of funds. Follow-up monitoring of the cooperatives and LLEs will be necessary, as well assessment of the efficacy of the various projects that have been implemented. Lessons learned from these assessments will need to be shared with stakeholders. 	<ul style="list-style-type: none"> The business advisory services and the review and approval process for LLEs to receive funds must be improved 	30 Nov 08
	<ul style="list-style-type: none"> Progress achieved on the auditing of compensation records was reviewed. As part of this process, the sustainability of the proposed methods to archive and retrieve this type of data as and when required was examined. POE is concerned about the sustainability of these methods as they are sophisticated and labour-intensive. The status of the compensation files verification exercise was such that of 3359 cases assessed in three cycles, 39.6% passed. 61.8% of the compensation records were updated. Completion of data base updates is anticipated by the end of September 2008. The establishment of a chain of custody for the files is a step forward, as is the check list for compensation payments documentation control. Obtaining of all <i>leloko</i> letters and letters from chiefs and DA and asset acquisition forms is being carried out, as is the compilation of the various forms for the compensation files. 	<ul style="list-style-type: none"> Add data on court case decisions and resolution of Ombudsman cases to the compensation files Train LHDA staff in the new methods 	On-going
	<ul style="list-style-type: none"> Progress of LHDA Annual Communal Compensation disbursements and pre-disbursement conditions was reviewed. ACP payments were timely in 2008, with all payments having been effected by August, 2008. Currently there are no bottlenecks in the annual compensation payment process. The ACP payments could be made more closely in time in order to maximize efficiency, and providing the payments earlier in the year would be useful for project-affected households. 	<ul style="list-style-type: none"> Plan 2009 ACP 	31 Jan 09
	<ul style="list-style-type: none"> The performance of the LHDA Contract 1254 (TAU Business Development Adviser) was reviewed, with an eye toward effectiveness and impact. It was found that the training provided had some serious problems, ranging from use of inexperienced training personnel to training 	<ul style="list-style-type: none"> The consultant should be requested to 	30 Nov 08

	<p>messages that were not well-attuned to the educational and experience levels of community members. Training should have focused more on book-keeping as opposed to accounting at the community level. Training was wide-ranging but would have benefited from more concentration on needs of LHDA personnel and LLEs. Training materials for community members were in English and not Sesotho. The TAU and FOB IGO personnel could have been integrated better into the training. Oversight of the training on the part of the consultant management was poor. Some of the tasks in the contract were not completed. The final report does not provide details on locations and numbers of community members trained nor does it provide evaluations of the effectiveness of the training.</p>	<p>complete the tasks contracted for and improvement of service delivery</p>	
2. Lump sum investment & operational guidelines			
	<ul style="list-style-type: none"> • Examples of the business plans of individuals receiving lump sum compensation and LLEs receiving communal compensation were reviewed. It was found that there was considerable variability in these plans. Cost/benefit analysis is done, as is an assessment of the opportunities and threats (risks). Business plan formats need to be standardized as recommended in Appendix 5. Anticipated returns are sometimes overestimated (e.g. in the case of the boat project of the Mallane Kopanang Basotho Ha Mallane Multi-purpose Cooperative). Some projects that were profitable in the past are less so now (e.g. taxis). Greater flows of information among the various FOBs about business potentials and problems would allow for up-to-date advice to be provided to LLEs and individuals receiving lump sum compensation. 	<ul style="list-style-type: none"> • Standardized formats for the business plans should be employed and the review process expedited 	<p>31 Dec 08</p>
	<ul style="list-style-type: none"> • The types of business that can be initiated with lump sums or less than M10, 000 are limited; they include craft production, small-scale poultry, vegetables, and tree seedling production. Many households receiving funds below M10,000 tend to try and meet basic household needs (food, house repair, school fees, clothing, fuel). LHDA is exploring options regarding investments with financial institutions. POE is concerned about the adequacy of the prevailing safeguard measures in financial institutions relating to the financial instruments chosen by lump sum and LLE investors given the current worldwide financial and banking crisis. LHDA is assessing the abilities of various financial institutions to guarantee the safety of their investments (i.e. deposit insurance) with an eye toward providing safeguards for individual and community investors. 	<ul style="list-style-type: none"> • Financial instruments with good returns & safeguards could be suggested to compensation recipients and deposit insurance is needed 	<p>30 Nov 08</p>

3. Income generation / Technical Assistance Unit			
	The services offered by the TAUs to the affected communities were reviewed, with a specific focus on (1) on the types and sizes of the investments relative to the size of funding accruing from communal compensation and (2) ways to improve this service and to expand the benefits and spread effects of these investments. Market analyses and assessment of competitive enterprises could enhance the investment benefits. TAU capacity is strong, but could be enhanced with additional staff and resources.	<ul style="list-style-type: none"> • Diversify investments per unit area and add development options 	30 Nov 08
	Cooperatives and LLEs are engaged in a variety of economic activities, including gardens, coffin making and sales, Vaseline manufacture, livestock production, hammer mills, shops that sell agricultural inputs such as fertilizer and poultry feed, and revolving credit schemes. Some of the cooperatives are engaged in seed potato and maize growing, and these have done relatively well. Taxis and malaene (rooms, rental property) are still popular, but interviews suggest that the economic returns are not as high as they used to be. Craft production continues among some households but finding markets for the crafts and sewing and knitted products continues to be an issue. Revolving credit schemes are popular in discussion, but implementation is problematic, and repayments for the loans are not always forthcoming	<ul style="list-style-type: none"> • Assess viability of enterprises and share lessons learned 	31 Dec 08
4. LHDA performance indicators			
	PoE was provided with LHDA's 16-page list of objectively verifiable indicators and conditions of their prevalence. The proposal identifies 12 Key Function Areas (KFAs) for each of which are listed priority issues, objectives, performance indicators, formulae for measuring indicators, frequency of monitoring and targets/standards. LHDA is to be complimented for the initiative which provides a potentially powerful tool for improving LHDA business performance. There were too many individual priority issues for PoE to review comprehensively all the elements in the time available, so PoE focused on the generic and strategic issues of the performance evaluation, as follows.		
	<ul style="list-style-type: none"> • What purposes should the evaluation satisfy? Surely to identify KFAs of weak performance, and to track performance over time. The present formulation of the performance evaluation system has limitations to meet such needs, but it can and should be improved. The present system has several related weaknesses as follows. <ul style="list-style-type: none"> ◦ Comparisons between KFAs are 'apples with pears' (How does one compare water delivery 	<ul style="list-style-type: none"> • Refine the KFA performance evaluation system to 	30 Nov 08

	<p>performance of 95% of target with only 90% of water quality data available?)</p> <ul style="list-style-type: none"> ◦ The rating of performance is nominal (the target or standard is met, or it is not met; pass or fail). A 99% water delivery is surely better than a 29% delivery. ◦ The performance indicators are insufficiently refined. For example, for IFR surely the most important indicator is attainment of the target downstream river condition. IFR releases are only a means to that primary objective, not an end in themselves. <p>Suggestions on how the weaknesses might be overcome are given in Appendix 1.</p>	facilitate identity of weak areas, and show performance over time, at a glance	
	<ul style="list-style-type: none"> • LHDA's proposed performance evaluation system has potential to give direction to corporate and, in particular individual section and person efforts. Sections and individuals have responsibilities to ensure that targets/standards are met. Staff performance evaluation might be based in part on the degree to which the targets for KFAs are met. 	<ul style="list-style-type: none"> • Use KFA performance in staff performance evaluation 	30 Nov 08
5. LHDA Contract 1204 (Population & Epidemiology Impact Study)			
	<p>The revised main report has significantly improved in terms of format and assertion of facts but has not provided adequate evidence of the impact of the Highlands Water Project on the communities. There are no confidence levels tied to the observations made in the analysis. In addition the report has not provided evidence of the contribution of the various socio economic factors that were being investigated through a multi variate analysis but has persisted to use single variable analysis across the three groups of respondents in the study.</p>	<ul style="list-style-type: none"> • As the investment in the study has been high there is a need to salvage the study by working closely with the consultant in the analysis of the data using a working group forum to salvage the study 	30 Nov 08
	<ul style="list-style-type: none"> • All the revised reports were not made available for further scrutiny as they were still being revised. 	<ul style="list-style-type: none"> • All the remaining documents 	

		need to be submitted and negotiations for the salvage plan be put in place.	
	<ul style="list-style-type: none"> Data from the study has been submitted on 6 disks with appropriate and detailed instructions and the data has been protected by locking the data base in read only form. The data was entered in SASS format but also converted to SPSS and JMP formats to provide the flexibility for further secondary analysis by other interested researchers. However the information given does not state what versions of the software were used or how the data base was structured. 	The Project management need to request the Study consultant to provide a short written tutorial on the management of the data sets sent and to have the data archived on the LHDA system as stated in the contract agreement.	15 Nov 08
		Other recommendations will be to terminate the contract on the basis of unsatisfactory performance and get an external bio statistician to	30 Nov 08

		carry out secondary analysis, but this will add to costs and uncertainty of the interpretation of the results.	
6. LHDA Contract 1044 (ICM)			
ICM Task 2	ICM Task 2: Resource Inventory is nearly completed and PoE reviewed the draft completion report, identifying the following.		
	<ul style="list-style-type: none"> From the draft completion report it appears that resource inventory has been prepared to a high standard 		
	<ul style="list-style-type: none"> The definition of grazing capacity (page 69 of draft completion report) does not include reference to animal performance, and does not distinguish between <i>ecological carrying capacity</i> (where the number of animals is balanced against the rangeland resources, and there is no net animal production) and <i>economic carrying capacity</i> (where the number of animals is held low in relation to the rangeland resources, and net animal production occurs). The <i>economic carrying capacity</i> applies in the case of commercial livestock production systems, and the <i>ecological carrying capacity</i> applies to traditional livestock systems, and to national parks where the wild herbivores are not culled. The actual situation in the Lesotho Highlands is that livestock is stocked closer to <i>ecological</i> than <i>economic</i> carrying capacity. See Appendix 2 for explanation. 		<ul style="list-style-type: none"> The definition of grazing capacity must be revised to distinguish between economic and ecological carrying capacities <p>31 Oct 08</p>
	<ul style="list-style-type: none"> The draft completion report does not identify that the objectives of livestock systems in the project area are commercial or of the traditional type, or some mix of them. 		<ul style="list-style-type: none"> The differing objectives of commercial and traditional livestock systems must be explained in the completion report, and the <p>31 Oct 08</p>

		respective livestock systems in the PCAs qualified in the resource inventories in terms of livestock system objective.	
	<ul style="list-style-type: none"> The rangeland management interventions recommended in the draft completion report are for commercial livestock production systems, and under the objectives of the traditional livestock systems these recommended intervention alone are unlikely to improve rangeland condition or animal performance, and can impair the system (subsidized overgrazing). 	<ul style="list-style-type: none"> The completion report must be revised to explain the differing objectives of commercial and traditional livestock systems. 	31 Oct 08
		<ul style="list-style-type: none"> The livestock and rangeland experts in the ICM team must understand and apply the concepts of economic and ecological carrying capacities, and the differing 	31 Oct 08

		objectives of commercial and traditional livestock systems.	
		<ul style="list-style-type: none"> As prelude to any proposed rangeland or livestock interventions, the notions of economic and ecological carrying capacity, and objectives of commercial and traditional livestock systems must be explained to the livestock owners – not an easy task. 	For duration of ICM
	<ul style="list-style-type: none"> The draft completion report does not advise on rangeland and livestock improvements for traditional livestock systems. One way out is to identify exclusive grazing rights (areas) for each livestock owner. Otherwise, whether the livestock owners opt for commercial or traditional livestock system objectives, a system of control of animal numbers is essential under the communal grazing system. For example, a finite number of grazing rights might be identified for each grazing area, and the rights allocated among community members on some or other fair basis that the communities will have to decide. The rights might of course be tradeable. It might not be possible to broker schemes for livestock owners to control their livestock numbers, in 	<ul style="list-style-type: none"> Develop systems with the livestock owners for controlling animal numbers 	For duration of ICM

	which case rangeland management and livestock interventions are unlikely to be effective.		
ICM Task 3	ICM Task 3: Development Plans is nearly complete and PoE reviewed draft completion reports		
	<ul style="list-style-type: none"> On page 6 of the draft summary completion report the ideal of improving sustainable resource use is qualified by the listing of 7 objectives. As general guides these objectives are endorsed, but in specific applications problems are liable to arise. For example, the first objective is to optimize agricultural production and the second to optimize agricultural diversity. In practice these objectives are liable to conflict. In fact it is improbable that 2 or more objectives can be maximized simultaneously. One way around this is to adopt the ploy of the linear programmer who programs to maximize (or minimize) an objective function subject to the constraints that x is no more than a specified level, y is not greater than another level, etc ... The approach that ICM might take could be along the following lines. For any individual homestead or village aim to maximize agricultural production subject to the constraints that land use does not exceed land capability, soil loss on land capability Class I is <2 t/ha/yr, on Class II is <4 t/ha/yr, ... not more than (say) 80% of agricultural income should be from any single crop type (the ideal to diversify agriculture), and so on. The constraints should be set so that they are not impossible to attain but should 'stretch' the land users. ICM needs to develop and refine such an approach – it will take time, hard-thinking and testing, but a set of realistic and workable land use and land management standards would be a great achievement of ICM. See Appendix 3. 	<ul style="list-style-type: none"> ICM must develop and refine a set of land use and land management standards 	First draft standard 31 Oct 08
			Revised standard every 3 months
	<ul style="list-style-type: none"> It is not clear that Task 3 reports provide the logical and factual connection necessary to take ICM from resource inventory to implementation of ICM plans. Task 3 reports focus about communities development priorities rather than on how to improve the sustainability of land use. For example, for 'Muela PCA Dam desiltation and protection is the community's 10th and last development priority yet this is a high priority for LHWP. What Task 3 reports seem not to do, but need to do, is identify the mismatches between (a) land capability and existing land use, and (b) soil conservation practice and existing practice, and then develop the strategy for reconciling such differences. 	<ul style="list-style-type: none"> Develop specific implementation plans to improve sustainability of current land use 	30 Nov 08
	<ul style="list-style-type: none"> There is concern that ICM, with 3 years of the 5-year program already gone, will not achieve its objective. Most certainly ICM will not, during the remaining 2 years of the program, resolve all 	<ul style="list-style-type: none"> Focus where conservation 	Duration of ICM

	<p>issues of sustainable land use on the PCAs, let alone the catchments as a whole, and it would be unrealistic to think that this could happen. To address this attention needs to be given to 3 things. First, within the PCAs ICM should focus on cases where present conservation practice is poor, and the prospects of improving it are good. The ICM project needs some show-cases. Second, CMA must be made into functional institutions that are self-sustaining. Third, the catchments are LHWP's chief supplier. No business can afford not to cultivate its suppliers. While it might be realistic to scale down ICM work over time, some on-going and long-term involvement must be anticipated.</p>	<p>practice is poor, prospects for improvement good – can develop show- & -tell cases</p>	
		<ul style="list-style-type: none"> • Develop functional self-sustaining CMCs 	<p>Duration of ICM</p>
		<ul style="list-style-type: none"> • LHDA must develop a plan for catchment management facilitation after 2010 	<p>31 Dec 09</p>
	<ul style="list-style-type: none"> • It is reported that LHDA land – arable fields and grazing land – for which LHDA paid compensation, is being used by local communities. Left unaddressed this could set unfortunate precedents. However, simply expelling the illegal land users could also have bad repercussions such as arson, other malicious damage to property, and harm to local community-LHDA relations. What might be done? There might well be areas of LHDA land that should, for reasons of project security and people safety, be out of bounds. But beyond these exceptions there is a case for wise use of LHDA land. For example, land might be leased back to local communities or individuals subject to any reasonable conditions that LHDA might wish to impose: conservation farming is applied, annual renewal of lease subject to LHDA's conditions being met, etc. There is precedent for such an approach – for powerlines and pipelines compensation is paid at land market value for a servitude, then after construction the land owner/user is allowed use of the servitude, but often subject to some restrictions. The possible lease back of LHDA land is an opportunity for ICM to develop, apply and test the land use and land management standards already recommended. The use of LHDA land also relates to reservoir zoning and the 	<ul style="list-style-type: none"> • LHDA must develop and implement a policy for the wise use of LHDA land – be it production, tourism, landscape & biodiversity conservation, or some combination. 	<p>30 Nov 08</p>

	proposal for declaration of Protected Landscapes.		
7. Lesotho Biodiversity Trust (LBT)/Maloti Minnow			
	<ul style="list-style-type: none"> Ongoing fish monitoring in the Mohale Dam has revealed an expanding population of Smallmouth Yellowfish. 	<ul style="list-style-type: none"> Continue fish monitoring in Mohale to remain informed about the colonisation of the reservoir. Keep record of fishing effort and catch. 	30 Nov 08
	<ul style="list-style-type: none"> Intensive gillnetting at the Senqunyane River mouth was conducted during the 2007-2008 summer months to prevent yellowfish entering the river, and 1,549 fish were removed in this way over a period of nine months. 	<ul style="list-style-type: none"> Continue intensive gillnetting during summer months of 2008 – 2009. This is vitally important and must be implemented immediately. 	30 Nov 08
	<ul style="list-style-type: none"> It is only a matter of time before yellowfish enter the Senqunyane River and move upstream. It is likewise inevitable that trout will enter the Mohale Dam, and from there move upstream in the Senqunyane River. The Maluti Minnow in the Senqunyane is thus in imminent danger of extinction. 	<ul style="list-style-type: none"> The LBT Board must call an emergency meeting to discuss the situation. The Panel believes the LBT is now 	30 Nov 08

		<p>out of its depth and needs help. If the Trustees agree, then the LHWC should be requested to intervene immediately and take the matter in hand by setting up a Task Team to take the matter forward.</p>	
	<ul style="list-style-type: none"> The LBT has failed to raise external sources of funding for the construction of a barrier to prevent invasive fish species from moving up the Senqunyane River. The LBT is not sufficiently well known or independent to attract individual and corporate donations. 	<ul style="list-style-type: none"> The Task Team must urgently progress the design of the barrier, initiate the EIA process and make the required financial estimates for putting the barrier in place. If this requires the majority of the LBT's funds, the barrier is the 	<p>30 Nov 08</p>

		priority.	
		<ul style="list-style-type: none"> The LBT has developed useful expertise in fish science. This is a service that LHDA must nurture and use. 	30 Nov 08
		<ul style="list-style-type: none"> The reputational damage that could result from closing down the LBT must be considered by LHDA. 	30 Nov 08
	<ul style="list-style-type: none"> Draft Terms of Reference for the EIA and EMP have been drawn up and the Panel has provided comments in an Appendix 4. 	<ul style="list-style-type: none"> The Task Team envisaged above must revisit the Terms of Reference before engaging the consultant to do the work 	30 Nov 08
8. IFR related issues			
Delegating IFR releases to Dam Operators	<ul style="list-style-type: none"> LHDA is developing a system of IFR releases based not on pre-planned base and flood flows (the present situation), but on releasing a predetermined fraction of inflows. The system is being 	<ul style="list-style-type: none"> Develop and implement new 	30 Nov 08

	<p>developed for Katse only, for the moment. The paradigm of the present release system is that, given a bulk IFR allocation, IFR science knows best how to divide up base and flood flows to maintain a specified river condition. The merits of the present system are as follows.</p> <ul style="list-style-type: none"> ◦ Flood releases are known in advance and flood warning can be notified downstream. ◦ The occasional big and unstoppable floods have moderate downstream impact. ◦ Infrequent release valve adjustment. <p>Among the demerits of the present system are the following.</p> <ul style="list-style-type: none"> ◦ By comparison with natural flow regimes the present system imposes flow uniformity (high flows and low flows at the same time of year every year). ◦ Flood releases occur at man-decided times that do not necessarily coincide with natural events. ◦ Since the flood releases might not coincide with natural events, flood warning notification is critical. ◦ Withholding of flood releases to await natural events can result in non-release and then a deficit in prescribed bulk IFR release. ◦ IFR science has limited capacity to know best how to design a release regime. <p>The paradigm of the proposed release system is to mimic the natural flow variability as closely as dam design and technology permit, based on a reservoir water balance model with a 1-day time step. The merits of this system are as follows.</p> <ul style="list-style-type: none"> ◦ The timing, frequency and duration of floods are near natural, and fallible human decision-making is excluded. ◦ Low and high flows coincide with natural events, so floods do not occur when the river biota and local communities are not expecting them. ◦ The need for flood warning notification is reduced. <p>Possible demerits of the proposed release system are as follows.</p> <ul style="list-style-type: none"> ◦ Frequent release valve adjustment is required, and there will be dam design and other technical limits to the degree to which, and frequency at which, valve adjustment can be made. ◦ The occasional big and unstoppable floods would probably have big downstream impact. ◦ The proposed release system is untried & untested. <p>LHDA is to be complimented on the innovation – we all stand to learn by trying out new</p>	<p>release system and begin to test for later comparison with existing release system.</p>	
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	<p>things. Key performance variables might include the following</p> <ul style="list-style-type: none"> ◦ Ease (cost) with which information can be gathered for the daily reservoir water balance model ◦ Degree to which, and frequency at which, valve adjustment is technically possible to reasonably mimic the natural flow variability ◦ The impact on downstream river condition ◦ The response of the local communities to the flow release system 		
		<ul style="list-style-type: none"> • Compare new release system and then compare with existing release system, then review and revise release strategy. 	30 Sep 09
IFR 2004/05 & 2005/06 Annual Reports	<ul style="list-style-type: none"> • These reports are long overdue. It is understood that the 2006/07 report has not been drafted and no preparation has been made for the 2007/08 report. To avoid undue delays in future a number of measures can be put into effect: Collect the necessary information during the year so that upon year-end the raw material is available. Standardize the table of contents. Aim at a concise and factual report. If a consultant used then appoint her/him in advance. Impose and enforce tight timelines. 	<ul style="list-style-type: none"> • Implement a strategy to ensure IFR annual reports are completed within 3 months of the end of the year on which they report 	31 Oct 08
	<ul style="list-style-type: none"> • The current IFR 2004/05 Annual Report is a big improvement on the version PoE saw in May 2007. It does however suffer from loose wording/reporting that should be avoided in future reports. On page 6 it says the IFR is to ensure that downstream rivers are not negatively impacted. This is not realistic. Virtually all projects have some negative impacts. Rather, the aim is to limit negative impacts, but even then is the explicit aim not to maintain specified river conditions? On page 10 the IFR report says 'A major impact that was noted is the thermal 	<ul style="list-style-type: none"> • Accept the IFR 2004/05 Annual Report, as imperfect as it might be, and work on future 	30 Sep 08

	<p>impact of summer flood releases which are colder than acceptable and result in excessive cooling of the downstream river.' But where are the facts to support 'a major impact'? What fish kills or other impacts were documented? On what basis is it alleged that the water was colder than acceptable? Whence comes the standard that temperature change should not exceed 2°C? PoE's information is that absolute temperatures (except if they are high) are immaterial, the <i>rate</i> of temperature change matters, Lesotho Highlands stream biota is tolerant of rapid temperature change (<i>viz</i> hot river rocks on summer morning, hailstorm and a cold flood in afternoon; in winter hot dry pre-frontal conditions followed by snow). In short, the IFR report contains waffle on speculative issues, whereas the report should be concise and informative. The key performance indicators (KPIs) are not highlighted, and there is no tracking of performance on IFR over time. The point of identifying these kinds of report shortcomings is to avoid them being repeated in future reports. The 2004/05 Annual Report is now so obsolete that it would serve no useful purpose for LHDA to spend any more time on it.</p>	reports.	
	<ul style="list-style-type: none"> • The IFR 2005/06 Annual Report is excessive. The Executive Summary alone is 24 pages of single-spaced technical reporting in bland arial font size 10. No busy executive can afford to wade through this encyclopaedia, nor should he/she, for the report does not show the wood for the trees. The body of the report is worse than the Executive Summary. KPIs are hard to find. IFR performance over time is not tracked. As with the 2004/05 Annual Report, the point of identifying these kinds of report shortcomings is to avoid them being repeated in future reports. The 2005/06 Annual Report is now so obsolete that it would serve no useful purpose for LHDA to spend any more time on it. 	<ul style="list-style-type: none"> • Accept the IFR 2005/06 Annual Report, as imperfect as it might be, and work on future reports 	30 Sep 08
	<ul style="list-style-type: none"> • IFR annual reporting needs to be concise, factual and focused on KPIs, as follows. <ul style="list-style-type: none"> ◦ River condition – extent to which targeted river conditions have been met ◦ Flow releases – extent to which bulk IFR releases met ◦ IFR deficits – extent to which past flow deficits have been reduced ◦ IFR monitoring – extent to which water quality, vegetation and fish have been monitored to enable application of the DECISION RULES ◦ Downstream compensation & development program – extent to which tasks have been completed satisfactorily ◦ IFR annual reports – concise, KPIs, by 31 Dec every year ◦ Track all the above key performance indicators over successive years so progress (or lack of it), and areas of poor performance, are obvious at a glance 	<ul style="list-style-type: none"> • Revise the IFR annual report table of contents around the IFR KPIs. 	31 Oct 08

	<ul style="list-style-type: none"> The performance on IFR policy is weak in terms of reporting. 	<ul style="list-style-type: none"> Prepare draft IFR Annual Reports for 2006/07 and 2007/08. 	30 Nov 08
IFR implementation	<ul style="list-style-type: none"> According to flow release data supplied by LHDA for 2006/07 and Oct 2007 to Jul 2008 there is under release from Mohale in the latter period, and there have been no flood releases from Mohale during both periods. The reason for non release of floods from Mohale is not clear. 	<ul style="list-style-type: none"> Flood releases from Mohale must be made, and release deficits made up. 	30 Nov 08
	<ul style="list-style-type: none"> PoE understands that there is a problem with monitoring water quality because data loggers have been vandalized. If continuous data logging is not feasible (for some locations) then do the next best thing (collect data manually at least monthly) with immediate effect. 	<ul style="list-style-type: none"> Collect water quality data as best possible, analyze and write-up reports 	30 Sep 08
	<ul style="list-style-type: none"> PoE understands that vegetation monitoring data have been collected by not analyzed, interpreted and written up. 	<ul style="list-style-type: none"> Analyze data, interpret and write up reports for 2007 and 2008 	30 Nov 08
	<ul style="list-style-type: none"> PoE had sight of the fish monitoring report for 2007. According to this report, IFR 9 (upstream of Matsoku weir) is the only case where present conditions are rated worse than targeted. This has arisen because of apparent decline/loss of Maloti Minnow, possibly by displacement by small-mouthed yellowfish that has invaded perhaps via the Matsoku-Katse tunnel. This is a biodiversity loss but not a loss to the local community exploitable resource base (yellowfish can be caught and eaten). 	<ul style="list-style-type: none"> Complete field work and write up report for 2008 	30 Nov 08
	<ul style="list-style-type: none"> The biophysical monitoring reports must enable to DECISION RULES to be applied. At the time of this PoE mission, reports for water quality and vegetation are not to hand. 	<ul style="list-style-type: none"> Complete all monitoring reports 	30 Nov 08

9. Residual resettlement			
	<ul style="list-style-type: none"> Progress achieved under Residual Resettlement was reviewed. Two areas in Mohale were declared by the Commissioner of Lands as 'land set aside for public purpose.' The Land Allocation Committee visited Nthakhane and Kolotshane and fields were assessed. Criteria were developed for who should be allocated land in these areas. Allocations of fields were made to 10 households from Lebiletsa, 6 households from Phomolo, 8 households from Khamolane, and 4 from Masaleng (a total of 28 households). These households have taken up their fields and are completing the required paperwork. Declaration of existing areas under the 1979 Land Act and determination of additional areas of land is pending. See Appendix 6. 	<ul style="list-style-type: none"> Finalization of the case files and Form Cs for households 	30 Nov 08
	<ul style="list-style-type: none"> Approximately 74 households lost over 50% of their land either as a result of the reservoir or as a result of the roads and other infrastructure. This means that 46 households remain to be dealt with under Residual Resettlement. At the time of the POE visit, the Residual Resettlement Policy was still being reviewed. It is anticipated that the remaining households will be offered the option of (a) resettlement, or (b) remaining in Mohale. In the latter case, the households will be offered a limited benefits package according to the draft Residual Resettlement policy. The Field Operations Branch, LHDA, the LHWC, government officials (e.g. the Commissioner of Lands), chiefs, and the Land Allocation Committee are continuing discussions concerning land issues in Mohale, with an eye toward finalizing the current allocation process and assessing future options for the remaining households under Residual Resettlement. 	<ul style="list-style-type: none"> The Residual Resettlement Policy should be finalized, and the remaining households losing over 50% of their land should be offered the options of either resettlement or relocation and a benefits package 	31 Dec 08
10. LHWP Zonation – LHDA Contract 1255			
	<ul style="list-style-type: none"> PoE met with Contract 1255 executants and reviewed the Scope of services. The task is to do a short (8 weeks) consultancy to revisit the existing Zoning Management Plan (Contract 674) and make recommendations in the light of new developments in local government and land tenure. A gap analysis and consideration of the activities of Catchment Management Committees as well as the Maloti Drakensberg Transfrontier Project are included in the tasks. 	<ul style="list-style-type: none"> PoE is satisfied that this project should proceed. The Panel recommends 	30 Nov 08

		that the consultants also review the PoE reports that deal with zonation issues and a set of reports was provided on a CD to the Manager of IPB for the use of the consultants.	
	<ul style="list-style-type: none"> LHDA has requested the Ministry of Tourism, Environment and Culture to declare the LHWP catchment area as a Protected Landscape. This is a Category V protected area in the IUCN system, and implementation is feasible in terms of Lesotho's Environment Act 2001 under Section 73. The Panel views this as an interesting proposal and agrees that if successful it could strengthen the management of the LHWP catchments. 	<ul style="list-style-type: none"> Attach an example of a Category V area from somewhere else in the world to illustrate. 	30 Nov 08
	<ul style="list-style-type: none"> The LHDA proposal envisages that if the LHWP is declared a Protected Landscape, it would be entitled to charge entry fees to both local and foreign visitors (at differential rates). The Panel anticipates resistance by locals to payment of entry fees. Many road users are transiting the area on unrelated business. Roads and better access are already perceived as a local benefit from the LHWP, so why should users be asked to pay? There will be inevitable calls for exemptions to payment, the administration of which will become a nightmare. The hazards of handling cash have become so problematic that many agencies will only accept electronic payments by card. 	<ul style="list-style-type: none"> Review charging entrance fees. 	30 Nov 08
11. Public health			
	<ul style="list-style-type: none"> The status of public health in LHDA can be described as inadequately supported with no appropriately qualified personnel to manage and monitor public health activities in the 	<ul style="list-style-type: none"> LHDA to commission an 	31 Jan 09

	organization. The absence of a definitive Public Health Policy in LHDA may be mainly responsible for the lack of focus on public health issues within LHDA programs.	expert to assist in the development of a definitive public health policy that will include Health and Safety, advocacy and community education and establishment and mainstreaming of HIV into the main stream management processes.	
	<ul style="list-style-type: none"> LHDA has developed a policy on HIV and AIDS aimed at mainstreaming management of HIV and AIDS in the organization. The HIV and AID policy is still rudimentary and requires further refinement to comply with the national requirements and guidelines for management of HIV in the workplace. 	<ul style="list-style-type: none"> Review the current draft policy and refine it in line with the current national guidelines. 	31 Jan 09
	<ul style="list-style-type: none"> In spite of the existence of a draft HIV and AIDS policy, there has been little movement in the establishment of systems for Workplace management of HIV. 	<ul style="list-style-type: none"> Formalize the HIV and AIDS policy and implement a functional HIV and AIDS workplace 	20 Dec 08

		program.	
Public Health Policy	<ul style="list-style-type: none"> LHDA has no definitive policy on public health and all its public health programs are guided by experience from other institutions or individuals 	<ul style="list-style-type: none"> There is an urgent need to develop a definitive public health policy to guide development of public health action 	30 Jan 2009
Establishment of Focal Point for Public Health in LHDA	<ul style="list-style-type: none"> There is currently no focal point for public health programs in LHDA, And the development and maintenance of public health activities have continued to be compromised as a result of this. The previous suggestion of utilizing an external consultant to guide the process has been found to be unworkable . 	<ul style="list-style-type: none"> LHDA should review its organizational structure and consider the engagement of a public health focal person possibly within the M&E branch 	This will need to be effected within the first quarter of 2009
12. WATSAN program			
	<ul style="list-style-type: none"> The WATSAN program has largely been implemented and only a portion of the KLM WATSAN in phase 1A has not been completed due to lack of funds and spiralling costs of materials 	<ul style="list-style-type: none"> Construction should start as soon as possible to avoid lack of confidence towards the LHDA 	30 Sep 08
	<ul style="list-style-type: none"> The Lesotho Highlands Water Commission has decided to take over the completion of the project by proposing cost reducing strategies that include de-linking the project implementation 	<ul style="list-style-type: none"> LHDA should review its 	31 Jan 09

	<p>from the costly LHDA overhead cost apportionment. The use of the Commission to implement the project has a number of legal and moral problems notwithstanding the need for saving funds from the high LHDA administrative overheads. LHWC should provide the oversight and therefore should not be the implementing agency – who is it going to account to?</p>	<p>operational capacity in implementation of projects with the view to improving them.</p> <ul style="list-style-type: none"> • It should develop and establish an appropriate project management structures (Program Evaluation and Review Committees) that would regularly monitor progress and identify possible glitches before they occur 	
	<ul style="list-style-type: none"> • However the proposed strategies of cost cutting would appear to lead to reduction of local community participation in the in the construction of the water systems and VIPs. This may be misconstrued as breaking of promises that were made when the work was stopped. This could lead to reduced community buy-in and ownership of facilities. 	<ul style="list-style-type: none"> • An urgent review of this proposal should be undertaken to ensure that 	<p>30 Nov 08</p>

		there are no legal encumbrances encountered, as well as to establish appropriate supervisory mechanisms for the project	
	<ul style="list-style-type: none"> The planned non use of public health teams to educate and sensitise communities to participate in the construction, use and maintenance of the facilities will be lost and community partnership will be severely compromised 	<ul style="list-style-type: none"> A review of the methodology planned for the completion of the project should be undertaken to examine the implication on the community buy-in and ownership of the facilities 	31 Oct 08
13. Community infrastructure			
	<ul style="list-style-type: none"> The community infrastructure policy and planning process were reviewed. Some progress has been made particularly in areas where communal compensation has been received (e.g. in Katse, Lejone, and 'Muela and in downstream areas where LLEs exist). Discussions are on-going about the kinds of infrastructure that communities wish to develop. Issues remain regarding the roles of LHDA, government ministries, local government institutions, chiefs and headmen, and community-based organizations, and how funds will be obtained for development if communal compensation is not available. Policy decisions are necessary regarding responsibility for infrastructure development and community participation. 	<ul style="list-style-type: none"> The community infrastructure policy should be revised to address stakeholder roles 	31 Dec 08

14. General	<ul style="list-style-type: none"> PoE's previous mission was 15 months ago in May 2007. With infrequent missions of short duration (5 days) it is not possible for PoE to fulfil its role to provide independent assessment of LHDA's activities. 	<ul style="list-style-type: none"> LHDA should enter into 2-year contracts with PoE members for two 10-day missions per year (March and September). ToRs set 2 months in advance 	30 Nov 08
	<ul style="list-style-type: none"> There is a backlog of urgent unfinished social and environmental tasks (fish barriers on inflows to Mochale, IFR monitoring, compensation, resettlement, WATSAN, ICM, <i>etc</i>) on which the reputation of LHWP and Lesotho hangs. There is an impending and immanent decision on LHWP Phase 2. Go-ahead will be a huge boost to economic development, opportunities and living standards in Lesotho. LHDA's performance is a factor in the decision. Never has it been more critical that LHDA fulfils its obligations in the interests of nation building, to avoid a go-ahead decision on Phase 2 being postponed. It is therefore crucial that the deadlines for satisfactory completion of tasks set out in this report be met. 	<ul style="list-style-type: none"> PoE should have a mission 1-10 Dec 08 to assist in task completion 	10 Dec 08
	<ul style="list-style-type: none"> 5-day PoE missions to Lesotho are insufficient for PoE to fulfil its role in independent assessment of LHDA's activities. Beyond reviewing reports and meeting with LHWP participants in Maseru, PoE – to be diligent – needs to visit site: meet the 'Muela, Katse and Mochale Managers on site, talk to project affected persons, review the interventions on Bokong wetland, check on alien plant invader control, visit KFF, see reservoir sedimentation and measures to control it, inspect the downstream river reaches, and so on. 	<ul style="list-style-type: none"> Future PoE mission must be 10 days (include time for site visits). 	1 Dec 08
	<ul style="list-style-type: none"> LHDA does not have the in-house expertise to supervise highly technical and demanding contracts such as 1204. PoE can help here in providing closer supervision and guidance of task execution. 	<ul style="list-style-type: none"> LHDA should commission individual panellists to assist in 	30 Sep 08

		contract supervision between PoE missions	
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Appendix 1 Example of performance assessment

1. Design a hierarchical system with a summary matrix that gives a summary score for each KFA for each year, as follows.

KFA	Score			
	2008	2009	2010	etc
1				
2				
3				
IFR	75	78	83	
4				
5				
etc				

2. For each KFA identify key performance indicators (KPIs). For example, for IFR these might be as follows.

- River condition – extent to which targeted river conditions have been met
- Flow releases – extent to which bulk IFR releases met
- IFR deficits – extent to which past flow deficits have been reduced
- IFR monitoring – extent to which water quality, vegetation and fish have been monitored to enable application of the DECISION RULES, written up in reports by 31 Dec each year
- Downstream compensation & development program – extent to which tasks have been completed satisfactorily
- IFR annual reports – concise, KPIs, by 31 Dec every year

3. Score each KPI on a 3-2-1-0 basis where

3 = excellent, best practice, could hardly be better

2 = good practice satisfactory

1 = poor, unsatisfactory

0 = very poor, nothing on place

4. In this way the scoring for river condition might be as follows.

3 = targeted river condition attained or bettered on ≥ 8 IFR reaches, no reach more than one class below target

2 = targeted river condition attained or bettered for $5 < 8$ reaches, no reach more than one class below target

1 = targeted river condition attained or bettered on < 5 reaches, or one or more reaches more than one class below target

0 = targeted river condition attained or bettered on ≤ 2 reaches, or two or more reaches more than one class below target

5. Develop a scoring system like the above for every IFR KPI.

6. Score each IFR KPI.

7. Calculate the summary score for IFR KPIs by summing the KPI scores and expressing as a percentage of the maximum total possible. Put this summary score in the summary table under step 1 above.
8. Repeat this exercise for every KPA.

Appendix 2 Stocking rate and animal performance

Animal performance – whether measured in birth rate, kilograms gained per day, litres of milk produced per day, amount of wool grown per day – is a nearly linear function of stocking rate. In other words, the higher the animal density the lower is the animal performance. To understand the full implications of this it is worth considering the relevant models – the logistic model that describes the growth of a breeding nucleus released into a previously unoccupied habitat, and the Jones-Sandland model that the animal productionists and pasture scientists use to measure the dependence of animal performance on stocking rate.

Suppose a breeding nucleus of ungulates is released into a previously unoccupied but suitable habitat. What happens? The population trajectory is plotted in Exhibit 1.

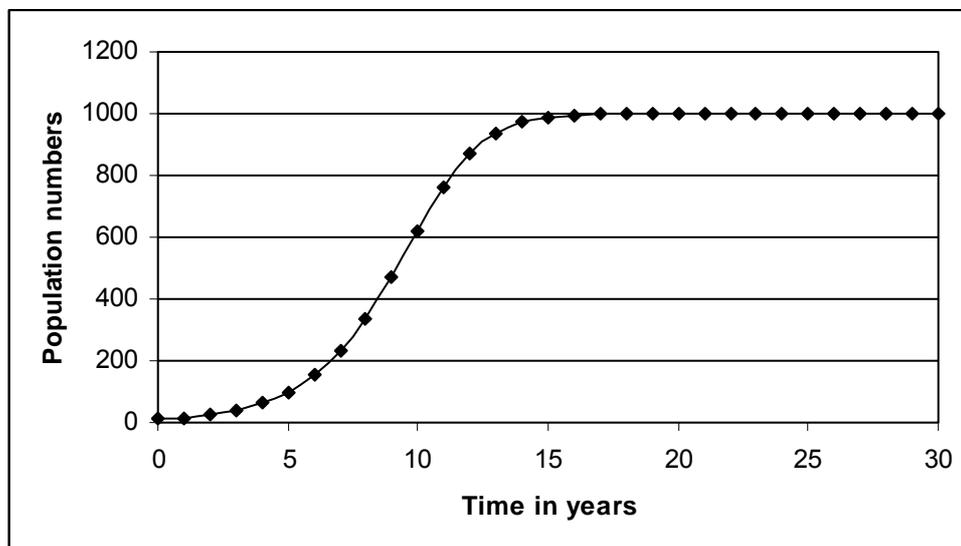


Exhibit 1 Logistic growth. The graph assumes a seed population of 10 animals introduced into a previously unoccupied but suitable area of 1000 ha. The intrinsic rate of natural increase, r_m , is assumed at 0.6. The actual rate of increase, r , is given by $r_m(1-N/K)$ where N is the number of animals and K is the *ecological carrying capacity* at 1000 animals.

At first the animals numbers increase at a very rapid rate. There are ample resources available to individual animals which grow fast, survive well and reproduce at near their potential. In due course, as the animal numbers build up, competition between the animals develops for the resources available so individuals grow more slowly, reach sexual maturity at an older age, reproduce less frequently, suffer parasitic infestation and disease transmissions more acutely, and experience higher mortality especially among the young and old. The population rate of growth slows and eventually tails off altogether when the resources are being fully used and deaths are exactly balanced by births. This equilibrium situation has been called the *ecological carrying capacity* (Caughley G 1977 *Analysis of Vertebrate Populations* John Wiley & Sons, Chichester). There is no net change in population size. Ungulates in protected areas where no culling is practised would settle at this ecological carrying capacity. This is obviously not an appropriate stocking rate for any animal production system

since the animals are not producing anything. To get the animal population to be productive the animal numbers must be reduced and the stocking rate held at a low level where there are ample resources per individual animal. Caughley called this the *economic carrying capacity*. In practice the *economic carrying capacity* is less than one half of the *ecological carrying capacity*. The economic carrying capacity depends on the relative values of land, animals and products, and cost of management. Where land values are high relative to animals then the economic carrying capacity is near to maximizing production per ha. Where the value of animals is high relative to land the economic carrying capacity is very low (where animal performance per animal is high).

The same assumed data used to construct the logistic growth in Exhibit 4 were used to illustrate the Jones-Sandland model (Jones & Sandland 1974) in Exhibit 5. Note the inverse near linear relation between stocking rate and animal production per animal.

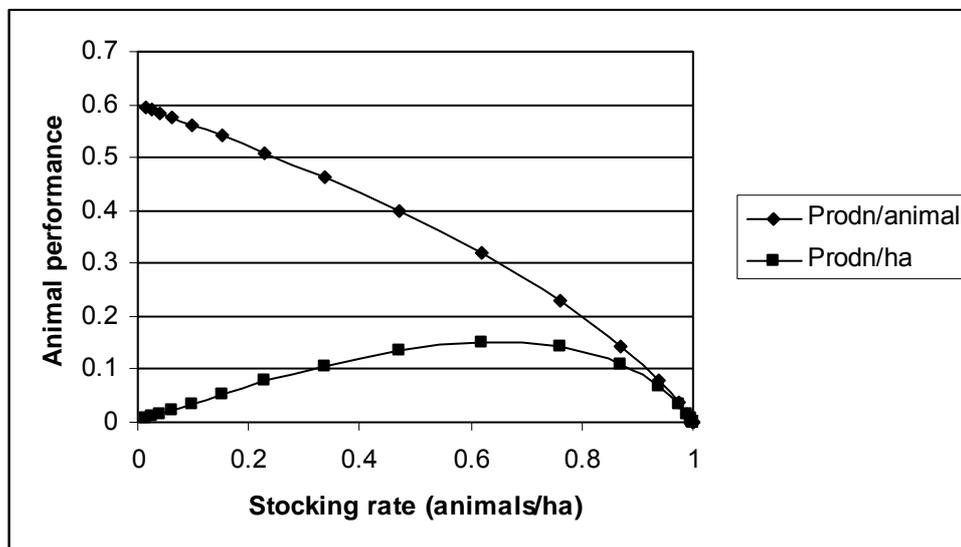


Exhibit 5 The Jones-Sandland model relating animal production and stocking rate. In this case animal production is measured in rate of population increase. Animal production per animal is a near linear function of stocking rate. Animal production per unit area is a bell curve. The convergence of the 2 animal performance curves corresponds with *ecological carrying capacity* at which there is no net population change, at a stocking rate of 1 animal per ha. The *economic carrying capacity* is at a stocking rate of less than one half of the *ecological carrying capacity*.

Of course the logistic and Jones-Sandland models are simplistic. They present circumstances in a constant world. In reality there are seasonal changes and annual variations. In semi-arid and arid environments, especially in regions with cyclic variation in rainfall, as in South Africa, the notion of constant carrying capacity, *ecological* or *economic*, might be too idealistic. During successions of high rainfall years ungulate populations live under conditions of plenty and they proliferate. When drought comes the populations crash, and then recover depending on the rainfall, until the next drought. The springbok migrations of the past are a case in point. In effect, the *ecological carrying capacity*, K , rises and falls, and ungulate population numbers track K , possibly with a lag. However, the wild ungulates are adapted to the seasonal

fluctuations and the principles of logistic population growth, and the dependence of animal performance on the resources available and the competition for them, are inevitable.

Appendix 3 Example of land status standards

The following is an extract of a summary description (quoted virtually verbatim) of standards for restoration of coal mining disturbed land. The SA Chamber of Mines objective of the rehabilitation is to restore pre-mining land capability. The situation in the Lesotho Highlands is different – sustainable agricultural production. In developing a set of standards for the Lesotho Highlands the summary below serves only as an illustration of the kind of approach. ICM would have to develop its own criteria and rating of them.

There are 7 criteria and they are each rated on a scale of 5-4-3-2-1 as follows.

Exhibit 2 Rating of environmental performance

Rating	Level of environmental practice	Description - degree to which sustainability is met
5	Best	Excellent, could not be better
4	Good	Not perfect, but of high standard
3	Fair	Satisfactory, better than average industry performance
2	Poor	Flawed rehab that does not comply with the ethic of sustainability
1	Very poor	Where no or little environmental management is practised

The environmental criteria and scoring of them is summarized in Exhibit 3. Brief explanation of the individual criteria follows.

Land capability

The purpose of mining rehabilitation is to restore mined land to its pre-mining agricultural land capability, as far as possible. In the ideal the EMPR should set out the pre-existing land capability and provide a plan for post-mining. A land capability classification scheme is provided in Exhibit 4. Conventionally, land capability classifications operate on the basis of the most limiting criterion.

For purposes of the present audit it was assumed that the mine was to be returned to grazing land capability after mining.

Exhibit 4 Land capability classification scheme

Land capability class	Diagnostic characteristics
Wetland	Organic O surface horizon OR > 50% of material within 75 cm of surface is gleyed OR site periodically, semi-permanently or permanently flooded
Arable	Not a wetland, slope steepness < 7%, no more than brief or occasional flooding, soil depth ≥ 60 cm, soil texture not sand, no gleycutanic or G-horizon or gleyed material within 40 cm of soil surface, no limitations (soil

	compaction, stones, surface roughness) to plants and use of farm machinery
Pasture	Not a wetland, not arable, slope steepness < 14%, soil depth \geq 25 cm
Grazing	Not a wetland, not arable, not a pasture, slope steepness < 30%, surface is not so acid, alkaline, compacted, saline or sodic to preclude sward structure rating \geq 2
Wilderness	Does not qualify as wetland, arable, pasture or grazing

Exhibit 3 Summary of rehabilitation criteria

	Land capability	Landscape form	Soil loss	Soil fertility	Species composition		Sward structure	Sward vigour
<i>Units</i>	<i>Specified land capability</i>	<i>Concave smooth drained & structures</i>	<i>t.ha⁻¹.a⁻¹</i>	<i>P K Mg pH Zn organic C</i>	<i>Desired grasses</i>	<i>Invader plants</i>	<i>Tuft size & distribution</i>	<i>Topdress (N) Defoliate (D)</i>
Score								
5	Fully met	Fully met	<2	Fully met	>90	None	Lawn	2N + 2D/yr
4	Minor constraint	Minor departure	2<4	Nearly met	80<90	Isolated	Semi-lawn	N + 2D/yr
3	1<10% not met	Needs top veld mgmt	4<8	Low	60<80	Occasional	Dense tufts	N + D/yr
2	10-20% not met	Defective/flawed	8<12	Deficient	40<60	Scattered	Sparse tufts	D/yr
1	>20% not met	No landscaping	>12	V deficient	<40	Common	Mostly bare	<D/yr

Landscape form

In the ideal is to recreate a landscape geometry approximating the pre-mining situation. The rationale is that the pre-mining terrain was created by geomorphic process and any serious departure from the natural form is likely to be unstable. The following sub-criteria of landscape form should apply.

- The lower landscape should be concave, not convex.
- The general land-form should be smoothly undulating like the pre-mining condition.
- The surface must be shaped so that water drains off it to outside the mined area.
- There is a drainage plan, and the landscaping conforms with it.
- The landscape should be even at the medium scale (free of localized humps and hollows arising from rough landscaping or localized subsidence) and fine scale (with rock and stone on and in the soil profile, and surface free of rills and ruts).
- The soil conservation works – including grassed waterways and contour banks – must be designed to fit the particular landscape, and they must be maintained.

Soil loss

The soil loss standards are based on general experience with processes and rates of soil loss and soil genesis. Plainly, if loss significantly exceeds genesis then the soil stock will be depleted, and the logic underlying the derivation of the standards is as follows. For the purposes of rehab audit soil loss is modelled using the Soil Loss Estimator for Southern Africa (SLEMSA), a simplified version of the Universal Soil Loss Equation (USLE) (Anonymous 1976).

Soil loss potential at a site is assessed assuming a vegetal cover of 50% if the actual cover is greater than 50%, or at the observed cover if it is less than 50%. This is because the average vegetal cover on veld is 50%-60% and it is assumed that all rehab will ultimately return to veld.

Soil fertility

The principle of the approach regarding soil and vegetation is to restore soil function so the soil can sustain a perennial vegetation cover. The restoration of soil function involves replenishing soil organic carbon. This is achieved by growing successive vigorous crops of grass, a feat that requires fertilizer-responsive grasses and fertilizer. While organic material can be included into the topsoil before grass establishment by mixing in manure, once grass is established the chief means is via grass roots. A vigorous grass tuft must have a big root system to support the stem and leaf. When stem and leaf are cut, or grazed or burnt, or die, then much of the root material dies too. It is this dying root material that contributes to the soil organic carbon.

Once soil function has been restored the land owner, or operator, can decide on whether to maintain the high production system that he has used to replenish soil organic carbon, or he can allow the pasture to develop to natural grassland with the native biodiversity restored. The first option – a high production pasture – is expensive and warranted only for high production classes of domestic livestock (*eg* dairy cows, finishing beef for the market). The second option – allowing re-establishment of the native grassland – requires on-going defoliation management (burning, grazing and/or mowing) but no fertilizer application. The full development of the natural grassland is a slow process spanning possibly 100 years. A phased program of soil fertility management on mining rehab is summarized in Exhibit 5.

Exhibit 5 Phased soil fertility management

Phase	Pasture age	Application	Management policy	Soil fertility standard
Soil development	< 5 years	All newly established pastures	A	Hi
High production	> 5 years	Pasture identified for high production	B	Hi
Succession to veld	5>10 years	All pastures 5<10 years old not under Policy B	C	Moderate
Succession to veld	>10 years	All pastures >10 years old not under Policy B	C	Soil organic carbon

The detailed fertility standards for the various phases are set out in Exhibit 6.

Exhibit 6 Soil fertility standards for mining rehab

The following are minimum values (P, K, Mg, Zn, organic carbon) & maximum values (Mn, acid saturation) for scoring performance. Score on basis of most limiting factor						
<i>Hi Standard – Less than 5 yrs old or high production pasture</i>						
Score	P	K	Mg	Zn	Mn	Acid sat
	mg/kg					%
5	15	120	120	1.5	20	2
4	12	100	100	1.2	30	5
3	9	90	90	0.9	40	10
2	8	80	80	0.8	50	40
1	<8	<80	<80	<0.8	>50	>40
<i>Moderate Standard – 5<10 yrs old not high production pasture</i>						
Score	P	K	Mg	Zn	Mn	Acid sat
	mg/kg					%
5	10	90	120	1.5	20	2
4	8	80	100	1.2	30	5
3	6	70	90	0.9	40	10
2	4	60	80	0.8	50	40
1	<4	<60	<80	<0.8	>50	>40
<i>Soil Organic Carbon Standard – >10 yrs old not high production pasture</i>						
Score	Organic					
	C %					
5	2					
4	1.5					
3	1					
2	0.8					
1	<0.8					

Pasture species composition

The scoring of species composition of a revegetated area is based on two sub-criteria – the proportion of desirable grasses and the absence, presence or abundance of undesirable plants, namely invader plants.

The scoring of the grasses and other herbs is done by a grass counting method (walk through pasture, every time right foot comes down identify the nearest live plant and record, make 100 records) and a system of scoring where individual plant types score points depending on how desirable they are regarded to be (from the point of view of rehab) and in what phase the rehabilitation is (see Exhibit 5) (Exhibit 7).

Exhibit 7 Multipliers for calculating the species composition

Species	Multiplier depending on Policy & pasture age				
	Policy A		Policy B	Policy C	
	<1yr	1<5 yrs	>5 yrs	5<10 yrs	>10 yrs
Smuts	1	1	1	1	1
Rhodes	1	1	1	1	1
Kikuyu	1	1	1	1	1
Teff	1	0	0	0	0
Love	0.75	0.75	0.75	0.75	1
Buffalo	0.5	0.5	0.5	0.5	1
Kweek	0	0.5	0.5	1	1
Krulblaar	0	0	0	0.5	1
Bahia	1	1	1	1	1
Purple	0	0	0	0.5	1
Other	0	0	0	0	0

To obtain the species composition score multiply the observed/recorded abundance by the multiplier and sum all these products. The sum will lie between 0 and 100 and is then scored in terms of column 6 in Exhibit 3. The invader plants are also rated for abundance and scored as in column 7 of Exhibit 3. For audit purposes the final score is the lesser of the sward species composition and invader plant scores.

Pasture structure

Pasture structure refers to the size, density and distribution of grass tufts. The ideal is many small grass tufts densely packed. Structure is determined principally by soil fertility and defoliation regime. Fertile soils with grass that is grazed frequently yield lawns which are preferred on mining rehab. Infrequent defoliation leads to big tuftedness – big widely spaced grass tufts that provide little protection against soil loss occurring from between the tufts. Infertile soils cannot support a dense stand of grass, the grasses growing in infertile soils are not resilient to grazing pressure. The system of rating sward structure is given in Exhibit 8.

Exhibit 8 Rating pasture structure

Score	Category	Visual appearance	Description
5	Best	↓↓↓↓↓↓↓↓↓↓↓↓↓↓↓↓	Lawn
4	Good	↓↓↓↓↓↓↓↓↓↓↓↓↓↓	Near lawn
3	Fair	↓↓↓↓↓↓↓↓↓↓↓↓	More grass than bare ground
2	Poor	↓↓↓↓↓↓↓↓↓↓	More bare ground than grass
1	Very Poor	↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	Very sparse

Pasture vigour

The vigour of the established pasture is scored on the basis of topdressing with nitrogen and defoliation frequency (Exhibit 8). The topdressing of nitrogen applies only for the first few years post-establishment, unless the objective is to maintain a high production pasture. The principle that underpins this is again the rehab paradigm, an objective of which is to increase soil organic carbon that derives from grass roots. Grass roots are best produced by growing a big grass crop. The large above-ground part needs a proportionately large below-ground part. Grass growth is stimulated by nitrogen topdressing in the presence of adequate soil fertility. A big die-off of grass roots occurs when the above-ground part is cropped (grazed, mowed or burnt). The dead and decaying roots are the main source of soil organic carbon. Rehab pastures that grow out and are left undefoliated 'stand still' whereas repeatedly topdressed and defoliated pastures pump carbon into the soil.

Exhibit 9 Standards for pasture vigour

Score	Category	Description
5	Best	≥2 topdressings of N + ≥2 defoliations per year
4	Good	1 topdressing of N + ≥2 defoliations per year
3	Fair	1 topdressing of N + 1 defoliation per year
2	Poor	1 defoliation per year
1	Very poor	<1 defoliation per year

Appendix 4 LBT & Maluti Minnow

Lesotho Biodiversity Trust (LBT), Maluti Minnow and EIA Terms of Reference for Barrier Construction

Terms of Reference for Panel visit of September 2008

No 6.7. Lesotho Biodiversity Trust (LBT)/ Maluti Minnow

- Review performance of the LBT and recommend sustainable solution(s) on the minnow.
- Critically review Terms of Reference prepared to conduct an EIA exercise for construction of barriers for the Maluti Minnow Conservation Project and provide comments and recommendations.

Introduction

At the kick-off meeting on the morning of 15 September 2008, the Panel was handed a package of six documents. These reports are listed at the end of this Appendix.

Document 2 was apparently prepared at short notice for the information of Panel and so this is the starting point for the Panel's response to ToR 6.7, bullet point #1: 'Review performance of the LBT and recommend sustainable solution(s) on the minnow'.

Performance of the LBT

Maluti Minnow conservation programme

The LBT has conducted very good work on monitoring the Maluti Minnow in its natural and historic distribution range in the Senqunyane, Bokong and Jorodane Rivers, and in the three areas where transplanted populations were introduced into new sanctuary rivers. The LBT has also monitored the colonisation of the Mohale Dam by fish that were kept out of the Senqunyane River system for millions of years by the Semonkoaneng waterfall, a natural barrier now rendered ineffective by the construction of the dam.

Transplanted populations in the Maletsunyane, Quthing and Makhaleng Rivers are all doing well. Ongoing monitoring over the next 5-10 years is required to verify that these new populations remain viable. Although the Jorodane River is part of the original habitat of the minnow, numbers were very low at the start of the project and some 365 fish were transplanted into the reaches above the Pampiri falls. This transplanted population is also doing well.

The Panel warns against any optimistic perceptions that these four transplanted populations could offer hope for the long-term survival of the Maluti Minnow. Three are in rivers that apparently did not historically host viable populations, and the

transplanted populations were relatively small, which could result in future limits to their viability through restricted genetic variability. These transplanted populations of minnows are of significant interest to evolutionary biologists, and constitute a unique experiment in conservation management that is of international importance. It is highly recommended by the Panel that ongoing monitoring of these populations and data collection be pursued.

Trustees

Document 2 (page 7) states:

“Recently, the Lesotho’s members are eventually showing a positive response in attending meetings and their attendance has been very good. However, it has been impossible to convince the South African members of the Board to attend meetings despite tightened efforts to invite them to meetings.”

Since Mr Addis was never recruited as a (South African) Trustee, and since Dr Seaman has subsequently resigned as a (South African) Trustee, there is in fact only one South African Trustee remaining in the form of Dr Cornelius. He advised LBT in 2007 that he was willing to step down in favour of someone else who could be more active in the affairs of the LBT. The real problem is that the LBT Board has not made an effort to recruit new South African Trustees.

“On its 7th meeting the Board has considered to make changes on the number of the Trustees, in order to make it more effective. It was agreed that the Trust should prominently be dominated by the Lesotho membership to easily allow for better attendance.”

The clause below from the Trust Deed was carefully worded during the discussions around the formation of the LBT, to reflect the bilateral nature of the LHWP project, which would resonate with a similar bilateral composition of the LBT. It was hoped that the South African Trustees would be able to draw on a wide range of regional resources and funds for the benefit of the LBT. The proposal above conflicts with both the letter and the spirit of the Deed of Trust and cannot legally be implemented except by changing the Deed, which currently reads:

6.1 Number

The Trust will be administered by six (6) trustees, three (3) representing the Kingdom of Lesotho and three (3) representing the Republic of South Africa and an alternate who will be appointed by the Founder and hold office for a period of three years....

“The term of office for the Board of Trustees was extended by three more years starting from May 2007 to May 2010.”

This is contrary to both the letter and spirit of the Deed of Trust which reads as follows:

6.2 Rotation of Trustees

After the initial three years, the Trustees will, with the approval of the Founder, implement a mechanism to rotate Trustees to ensure that new Trustees are recruited on a regular basis, while maintaining continuity in the running of the Trust.

Administration

The LBT is now housed with LHDA in the Bank Tower building which provides the Chairmanship, office accommodation, secretarial support and financial management. In turn the LHDA receives the free services of the LBT Conservation Officer to conduct biannual fish surveys for the IFR monitoring programme. The institutional line between the LBT and LHDA is not very clearly defined.

The administration of the LBT has been and remains problematic in several areas. The Chairman of the LBT, both legally and institutionally, is also the Chief Executive of LHDA. The LBT is (quite understandably) low on his list of many other priorities.

As a result, he is unable to give LBT anything more than a very small part of his valuable time. There is no provision for delegation of substantive LBT matters, queries or correspondence from outside. The day to day management of the LBT falls under the supervision of the Manager of the Integrated Planning Branch (IPB). Again, this person has a huge amount of work on his plate and LBT matters are very often the least of his worries.

These administrative problems result in inefficiencies and delays that seriously compromise the work of the LBT, and place in jeopardy the reputation of the LHDA, the LHWC, and the Government of Lesotho.

This statement is based on the fact that, as a signatory to the international Convention on Biological Diversity, the Government of Lesotho will fail in its obligations to the international community if the Maloti Minnow becomes extinct as a result of the Lesotho Highlands Water Project, particularly in the light of the extensive knowledge that is available about the situation of the minnow and the very clear steps that are necessary to avert its extinction.

During its last visit in May 2007, the Panel made the following observations and recommendations:

“The LBT Maloti Minnow project has done excellent work in monitoring the status of the fish in the Mohale catchment and reintroduction sites. Smallmouth Yellowfish are breeding in Mohale. To date no other alien fish have been recorded in the catchment. The issue of a barrier on the Senqunyane River is critically urgent. A full EIA will be

required that will prolong the process of barrier implementation. The commitment of LBT Trustees to devote the Trust's resources to barrier construction is essential."

Now, at the end of September 2008, the Panel finds that there has been no progress on the design and building of the barrier, and the draft Terms of Reference for the EIA have only now been put before the Panel for its comments.

Intensive gillnetting to prevent yellowfish from entering the Senqunyane River from Mohale Dam was carried out from September 2007 to May 2008. The operation was successful in that 1,549 Smallmouth Yellowfish were removed from this site.

On 18 September 2008 the Panel met with the LBT Management Committee in Maseru and stressed the importance of repeating the intensive gillnetting during the summer months of 2008-2009, as another (desperate) measure to reduce the chances of yellowfish penetrating the upper reaches of the Senqunyane.

It has subsequently transpired that the Conservation Officer cannot implement intensive gillnetting at Mohale in September 2008 because his vehicle requires new tyres that were requested in July but have not yet been bought because of the administrative inefficiencies in the LHDA system.

The LBT is apparently seen as a low-priority activity within the LHDA, causing inefficiencies and delays that seriously compromise the work of the LBT, and place in jeopardy the reputation of the LHDA, the LHWC, and the Government of Lesotho.

This is simply not acceptable, and the Panel recommends that the project authorities make an immediate intervention to address this crisis. We provide more detail later in this document.

Appointment of consultant

Document 2 (page 18) states:

"5.2.3. Fundraising consultant

As a concerted effort to raise more money, a fundraising consultant was engaged for a period of six months starting from May ending October 2007. Unfortunately the consultant could only submit two reports for May and June 2007 and nothing has been heard from him since. No funds raised through this strategy. The LBT has decided to undertake this campaign internally."

This is a misrepresentation of the facts in that the consultant was never appointed as a *fundraising* consultant, as is clear by the terms of reference of the contract:

“The Contractor serves as Consultant to the Lesotho Biodiversity Trust:

2:1 To establish the Fund Raising Plan

*2:2 To finalize the Strategic Plan for the Maloti Minnow (*Pseudobarbus quathlambae*)*

2.3: To establish interim institutional arrangements for the Lesotho Biodiversity Trust (LBT)

2.4: To propose appropriate institutional arrangements for the home of the Katse Botanical Garden”

From the outset, it was made very clear by the consultant that, given the short period of the contract (six months), and at the modest funding level of the service contract, he would not be in a position to raise funds, but would make suggestions for drawing up a *plan* to raise funds.

The relationship between the consultant and the LBT was plagued by poor communications from the start, and the consultant ceased activities after two months because of the lack of feedback from the LBT. The consultant made two public presentations in Johannesburg at which the plight of the Maloti Minnow and the financial needs of the LBT were described. In both cases there was a very poor response from both individuals and representatives of business, because of two main issues. The first is that the LBT is not recognised as an independent non-government organization, as it is controlled as an arm of the LHDA, and the second is the view that the Maloti Minnow is directly impacted by the Lesotho Highlands Water Project and it is therefore the responsibility of the project authorities to ensure that all appropriate steps are taken to prevent the extinction of the minnow.

During the Panel’s current visit it was mutually agreed to terminate the Service Contract. The consultant will lodge a final report with the LBT for the information of the Trustees. There is no acrimony, with LBT accepting that it was a pilot project and the consultant accepting that the pilot project did not work for either party.

Financials

Based on the information in Document 2:

LBT balance at end of March 2008 was M9,453,888.82

Eight million Maloti invested at 8% yields 640,000 pa; 10% yields 800,000 pa; 12% yields 960,000 pa; 14% yields 1,120,000 pa.

The financial report for April 2007 to March 2008 (contained in Document 2 and not necessarily the final figures) indicates:

Interest	650,587
Expenses	408,161
Surplus	142,426

Yet Document 2 states (page 15):

“According to the LBT audit report for 2007, it is revealed that funds for the Trust are being reduced at a rate of M82,000 per annum as a result of less money that is being generated from income earned against expenditure by the Trust. On the other hand no money is coming into the Trust account.”

Based on the figures for financial year 2007/2008, there would appear to be a surplus of 142,426 after expenses are deducted from interest income.

Interest rates in South Africa have risen sharply in recent months. A modest R10,000 investment for a fixed 12 month period is currently earning 12.29% per annum with Nedbank in South Africa. The LBT should be earning far better rates than that on its M9 million. The LBT funds should be moved to whatever financial institution offers the best rates.

Conclusions

The Lesotho Biodiversity Trust was founded as an innovative response to the challenge faced by major developments that place endangered species at risk. As such the LBT is a unique initiative – everyone associated with this pioneering endeavour should be proud of their efforts, from the past and present Trustees to the current workers.

However, our best efforts are sometimes just not enough to get us over the hurdles, and when faced with overwhelming challenges there is a time and place to ask for help. Indeed, the inability to ask for help has resulted in the failure of numerous worthy endeavours, and the brave efforts of many people have been wasted as a result.

The only realistic hope for the long-term survival of the Maluti Minnow is to protect and manage the populations in their original ancestral habitats of the Senqunyane, Bokong and Jorodane Rivers. The primary and critical intervention is the construction of a barrier on the Senqunyane River to prevent access by invasive fish species to the upstream areas where they will destroy the minnows.

Securing a viable, natural population of the Maluti Minnow in the Senqunyane catchment is the only acceptable outcome if Lesotho is to comply with its obligations as a signatory to the Convention on Biological Diversity.

The only way this will be achieved is through the construction of a barrier on the Senqunyane River to prevent yellowfish and trout from penetrating the upper reaches of the river. If time and money allow, a second barrier on the Bokong River would provide additional insurance.

Without barrier construction, the development of either artisanal or commercial fisheries in the Mohale reservoir cannot proceed. Without barrier construction, Phase

2 of the LHWP could be compromised. Without barrier construction, the reputation of the LHWP as an award-winning engineering project could be tarnished.

Recommendations

The Panel recommends that the barrier issue must immediately rise to the top of the agenda for both the project authorities and the LBT. There are some important and hard decisions to be made, but they **have to be made, and soon**.

- LBT Trustees should get together as soon as possible for an emergency meeting.
 - The debate is about whether LBT is out of its depth and needs help.
 - The Panel has little doubt that the LBT is out of its depth and needs help.
 - The LBT is constituted as an independent Trust and this is fully respected by the project authorities and the Panel. The LBT's future is in its own hands.
 - If the Trustees agree that they need help, this must be conveyed at once to the LHWC.
 - The Lesotho Highlands Water Commission must be requested to intervene in the interests of the project, and on behalf of the governments of Lesotho and South Africa.
 - The LHWC should assemble a Task Team to attend to the design and location of the barrier and to supervise the rewriting of the Terms of Reference for the EIA.
 - The funds of the LBT must be placed at the disposal of the project authorities for the EIA, design and construction of an approved barrier on the Senqunyane River. This must be carried out by the LHDA and LHWC acting jointly in the best interests of maintaining the reputation of the LHWP and the Government of Lesotho.
 - The fate of the LBT is secondary to the construction of the barrier, but the Panel hopes that its long-term future as a viable and legitimate national biodiversity NGO would be a matter of importance to all concerned.
-

Terms of Reference for EIA and EMP for conservation of Maluti Minnow through construction of artificial barriers

The Panel is required to “critically review Terms of Reference prepared to conduct an EIA exercise for construction of barriers for the Maluti Minnow Conservation Project and provide comments and recommendations.”

The issue of barrier construction is extremely urgent, as has been stressed for some time. Lesotho environmental legislation requires a full environmental impact study to be completed. Terms of Reference have been approved by the Board of the LBT. The Panel was given a copy of this document at the kick-off meeting on 15 September 2008.

In our view the document would benefit from rewriting, in particular Part 4, the specific terms of reference, to stress the priorities of this intervention. As presently worded, the Terms of Reference provide too many opportunities for a consultant to repeat tasks that have already been done, and in the process waste time and charge additional fees.

It is also essential that the EIA consultant must have details of the design and proposed location of the barrier before being awarded the contract to proceed. The Task Team envisaged under the recommendations above should handle the EIA process as well.

4. SPECIFIC TERMS OF REFERENCE

Task 1 Review relevant literature on Maluti Minnow

Sub-Task 1.1 The consultant shall review literature on Maluti Minnow particularly available documents and reports from previous LHWP studies such as contract 1041 on conservation of Maluti Minnow, and other related local, regional and international documents.

Panel comment: so much work has been done already that the Maluti Minnow is one of the best studied fish in the world. The EIA consultant should not be expected to reinvent the wheel or spend an unnecessary amount of time on this task. The first sub-task should be to provide an outline of the Convention on Biological Diversity, and what Lesotho's obligations are in terms of this international agreement. Then a brief overview of the studies done on the Maluti Minnow should put the situation in the context of the Convention on Biological Diversity.

Sub-task 1.2 Review Environmental Impact Assessment and Environmental Management Plan, which was conducted by Africon Environmental Services in January 2002.

Panel comment: delete this sub-task. The Africon report was not a proper EIA study.

Sub-task 1.3 The Consultant shall consult with relevant Government of Lesotho Ministries (Gol.) such as Environment, Tourism and Culture.

Sub-task 1.4 The consultant based on the available literature should provide a brief explanation on the types of barriers which are suitable for Mohale area.

Panel comment: Delete this sub-task. The consultant should deal only with the barrier design provided to him/her and not get involved in other designs that have already been rejected as being too expensive or difficult to build. The consultant should however comment on alternative locations of the barrier.

Sub-task 1.5. Review socio-economic values of the Maluti Minnow and its ecological importance.

Panel comment: delete this subtask. This is a sterile debate which is not relevant. The real relevance of the Maluti Minnow lies in its importance to the international Convention on Biological Diversity.

Task 2 Conduct the EIA and EMP based on Lesotho Government EIA procedure found in Lesotho's Environment Act of 2001

These are standard tasks required by legislation.

6 Timeframe

The study will be carried out over a period of six months by the preferred consultant.

Panel comment: this is far too long and this EIA must be fast-tracked given the urgency of the matter. Why should the Terms of Reference include such a time frame when the task could be performed in a shorter time?

List of Reports

Sephaka, T. (No date). *Implementation of instream flow requirements, biophysical monitoring procedures downstream of Phase 1 dams. Annual Report No 2. Data collection field trips, April & September 2007.* 20 pp.

Sephaka, T. December 2007. *Lesotho Biodiversity Trust. Semi-Annual Report No 3.* 15 pp.

Sephaka, T. June 2008. *Lesotho Biodiversity Trust. Conservation Officer's Report No 4.* v + 23 pp.

Sephaka, T. July 2008. *Assessment of the effectiveness of intensive gillnetting in the Senqunyane River. Report No 1.* 14 pp.

Document 1. No author. No date. *Terms of reference for Environmental Impact Assessment and Environmental Management Plan for conservation of Maloti Minnow through construction of artificial barriers.* 4 pp.

Document 2. No author. No date. *The status of the Lesotho Biodiversity Trust. 1.0.*
Purpose: To inform LHDA's Panel of Experts (Panel) about the implementation of the LBT and progress to-date. 24 pp.

Appendix 5 Compensation and business plans

The POE was asked to review and comment on the viability and sustainability of LLEs and the performance of those established. POE was also asked to advise on the effectiveness of the strategy adopted by LHDA for communities to access communal compensation and recommend corrective action as appropriate. There are 23 cooperatives upstream in Katse and 22 Local Legal Entities downstream. In Mohale there are 45 cooperatives upstream, 13 of which (at least) have been registered. Cooperatives and LLEs are engaged in a variety of economic activities, including gardens, sewing, coffin making and sales, Vaseline manufacture, livestock production, hammer mills, shops that sell agricultural inputs such as fertilizer and poultry feed, and revolving credit schemes. Some of the cooperatives are engaged in seed potato and maize growing, and these have done relatively well. Taxis and malaene (*rooms*, rental property) are still popular, but interviews suggest that the economic returns are not as high as they used to be. Craft production continues among some households but finding markets for the crafts *and sewing and knitted products* continues to be an issue. Revolving credit schemes are popular in discussion, but implementation is problematic, and repayments for the loans are not always forthcoming.

Two principles are central to all but a very few internationally financed resettlement programmes: (1) that the affected people should in large measure be the architects and the builders of their own futures; and (2) that none who are compelled to move should end up worse off than before. These principles were fully incorporated into LHDA's 1997 revision of its compensation and rehabilitation policy.

One of LHDA's legal obligations is to ensure that the LHDA "shall effect all measures to ensure that members of local communities who will be affected by flooding, construction works, or other similar Project-related causes, will be able to maintain a standard of living not inferior to that obtaining at the time of first disturbance" (*LHDA Treaty*, 1987, p. 27). The *LHDA Order* of 1986 states that the LHDA shall 'ensure that as far as reasonably possible, the standard of living and the income of persons displaced by the construction of an approved scheme shall not be reduced from the standard of living and the income existing prior to the displacement of such persons.'

Communal compensation in the form of the Rural Development Programme for losses of grazing and other natural resources was provided to project-affected communities and their hosts. To participate in the RDP people were required to form co-operatives, grazing associations or other kinds of local legal entities. The co-operatives enabled their members to purchase agricultural inputs and to market their products, including seed potatoes and maize; the grazing associations were intended to improve the management of the communal range; grain mills provided a service where none was previously available; other components included tourism, fisheries, health, water and sanitation and youth development.

While the individual compensation and threshold payments were intended to ensure that affected families were at least no worse off after than before resettlement, the 'communal compensation' was meant to bring 'development' and improved standards of living both to the affected families and to their hosts. It was recognised that dislocation of the Mohale communities was likely to have particularly adverse consequences for people with little or no land, for the old and dependent, for sick and disabled people, and even for young people with no land rights. For them

compensation for the loss of assets and of production could be quite inadequate to prevent their falling into poverty. The provision for compensating the holders of 'secondary rights' (see 5 above) and the Minimum Threshold Payment were designed to prevent this. Despite the difficulties of implementing these policies, they were sincere attempts by the Project to avoid harming the weak and the vulnerable.

LHDA, under its development programme, has supported a range of institutions and activities including co-operatives, range management associations, and agricultural extension services for the benefit of both the resettlers and their hosts. Coops and LLEs are the organizations which receive communal compensation. Coops are upstream of the dams, or in the resettlement host villages and receive compensation for communal resources lost by resettlers and "earned" by host villages who are impacted by the greater population impacts of receiving resettlers. LLEs receive communal compensation as a function of negative impacts caused by the reduction of water in the rivers that flow past them.

In the 1A project area all such organizations have been formed. There are 27 registered cooperatives in the Katse, Lejone, and Matsoku ("KLM") area, which have so far been paid a total of approximately M 11 million. They have begun 20 businesses, while 15 more are in preparation. Downstream of the dam, 22 LLEs have been formed, which have so far received M 27 million in compensation.

A total of 66 cooperatives have been planned for the Phase 1 area (upstream). While some, including the seed potato and maize growing cooperatives have clearly flourished, others are harder to assess. Cooperatives in general have a record of being complicated to implement in Lesotho, and people tend to be wary of committing their own resources to them. Individuals may enrol as members on a tentative basis, to see if the cooperative brings any tangible benefits, and if not they leave after a year or two. The number of cooperatives established therefore gives no assurance that they will survive or thrive. The Cooperatives Department of the Ministry of Agriculture is understaffed and the support it is able to offer new cooperatives and LLEs at the early and crucial stages of their development is therefore limited.

While the implementation of some of LHDA's development projects was delayed, a number of project-affected people have been able to benefit from them. Particular progress was made in 2003-2004 in seed potato production, thanks in part to a store with cooling facilities built by funds provided by LHDA and managed by the large farmer's cooperative at Mohale. There was also some success in promoting maize production, in spite of the drought. Many people had started gardens and were growing a wide range of vegetables.

A number of farmers in the project and resettlement areas are diversifying by raising chickens for consumption, sale, and egg production. One farmer was producing a wide variety of vegetables (onions, cabbage, and many others) along with apples and peaches that he was selling to neighbours and to teachers and health workers at the local mission hospital. Some cooperative members produce and sell tree seedlings, flowers, vegetables, and fruits. Cooperatives also produce and sell goods such as coffins, face creams, and crafts.

As LHDA's resettlement and compensation programme draws to a close, and funding for its various components, including the RDP, terminates, the question of sustainability becomes paramount. Without detailed socioeconomic investigations of the cooperatives and LLEs it is difficult to say how effective they are. It is, however, possible to say that (1) many of the cooperatives are engaging in entrepreneurial enterprises. There are at least 16 different kinds of activities in which cooperatives and LLEs are engaged. The returns on the investment vary considerably, but some of

the activities are proving to generate income and enhance livelihoods in other ways (e.g. reducing labour of women through the availability of hammer mills to grind maize, sorghum and other goods).

The business plans of the various cooperatives and of the LLEs vary considerably. Some are very short without much detail. Others are lengthy documents, 20 or more pages, with detailed costing and rates of return. It appears that the variability is due in part to the availability of an experienced income generation officer, Technical Assistance Unit member or Cooperatives representative who has the time to work with the cooperative or LLE to develop a business plan. In the past, there was an income generation officer/business plan advisor based in LHDA who advised communities how to go about doing business planning. The problem was that the advice was complex and the business plan models provided as examples were in many cases beyond the capacity of rural community members to handle without having some experience as accountants. The POE recommends that a consultant be engaged to come up with a flexible business plan geared to the level of experience and expertise of community members in the upstream and downstream areas. This consultant should have extensive experience with cooperatives and with small business in developing world situations, preferably in Africa.

Appendix 6 Residual resettlement

A survey of land losses to the reservoir carried out in 2005 by LHDA found that 65 Stage 3 households in Phase 1B were going to lose half or more of their land. Some of these households already had only 2 hectares or less, so the additional land losses posed significant risks their ability to survive. The provision of land in the two areas (Nthakane and Kolosatshane) vacated by villagers who opted to resettle resulted in 28 households from 4 villages being allocated land (see *Progress Report on Land Redistribution, Phase 1B*). What this means is that there are at least 37 households remaining who need to be covered in the Residual Resettlement program.

As revealed in field surveys, many of the remaining residual resettlement households have considered their options carefully, discussing them with friends and relatives who have moved out of the basin as well as those who have remained. They have seen that the people who moved out have been able, in some cases at least, to restore their livelihoods or to invest in economic activities that generate more income than they had previously. As a number of local people and some officials in LHDA noted, it would be unfair if Stage 1 and 2 households had the option of resettling outside of the basin and the Stage 3 households were denied that option. There is, in fact, little difference in the costs of resettlement versus relocation.

By October, 2006 LHDA had relented and was prepared to offer the possibility of resettlement to families in the eight designated villages who (a) lose 50% or more of their arable land to the project, (b) qualify to receive minimum threshold payments (which in 2006 was calculated at M7,7558.80), (c) have one hectare or less left of arable land, or (d) who were especially vulnerable (e.g. those households with members who were advanced in age or who were ill). The LHDA estimated that there were 103 households in what came to be known as the Residual Resettlement category who had to be targeted for assessment. LHDA now is in a position where it has to finalize the Residual Resettlement Policy and offer the remaining households the option of either remaining in the basin and relocating, or, alternatively, allowing them the option of resettlement.