

## TANZANIA: Boundary Hill Lodge Ltd. #9579

January 4, 2001

### (UPDATED) ENVIRONMENTAL ACTION PLAN (EAP)

**The Company and any other managers and operators of other lodges and/or companies within the Wildlife Management Area (WMA) must ensure the/that (they):**

- engage in non-consumptive tourism activities in the lodge area and/or the WMA;
- there will be no tree felling in the lodge area and/or the WMA;
- provide a role model for wildlife management outside core areas by local communities themselves in partnership with the private sector, which is in accordance with the Wildlife Sector Policy;
- all operations of the lodge(s) and WMA are in accordance with Tanzania National Parks Authority (TANAPA) policy and Tarangire National Park (TNP) management objectives;
- all structures blend into the surrounding environment/habitat and suitably located among flora and rock outcrops;
- all construction staff and the contractor(s) limit earth movement and soil exposure to the dry season/times of low rainfall;
- exposed surfaces must re-vegetated as soon as possible with indigenous plant species;
- water receiving surfaces must be lined with stones or concrete and where necessary vulnerable surfaces should be protected with mulch/other appropriate groundcover;
- during construction and operation human movement and activities should be controlled and restricted to designated areas and/or footpaths;
- storm water/surface run-off should be directed to settling basins before discharging into receiving waters;
- there will be no discharge of liquid waste disposal from the lodge, WMA or other ancillary facilities to the Gosuwa Swamp or other sensitive habitat;
- if soakaways do not operate effectively, as determined by IFC and the IFC/GEF SME Program or the respective Water Department, then the Company will establish septic tanks which will be regularly emptied and disposed of at a site where a soakaway can be suitably established, as determined by the Water Department or an independent sanitation engineer/hydrogeologist, or at authorised municipal sites in Arusha;
- soakaways and/or septic tanks must be located a minimum of 100 meters from any borehole;
- vegetable matter will be collected and composted near their Naitolia camp site and compost provided to villagers;;
- cans and bottles will be disposed of, or recycled if possible, at authorized municipal dump sites in Arusha;
- natural land contours of any disturbed land at construction sites or any ancillary sites must be reconstructed, as best as possible, to approximate previous conditions and be re-planted with indigenous vegetation;
- cleared vegetation and remains of construction materials should be incinerated or buried at site;
- roofing materials used will ensure the ability to harvest rain water;
- fire safety mitigation measures will include the following equipment/actions/installations:
  - (a) installation of fire extinguishers in all structures/areas (to include, but not be limited to, the following: guest rooms, kitchen, dining room, reception, staff quarters, staff kitchen, staff dining area, generator room and fuel storage area, stores, and workshop);
  - (b) establishment of a fixed hydrant hose reel system throughout the entire lodge complex, covering all areas listed above. This hydrant system must be connected to a dedicated water storage tank;
  - (c) installation of fire safety blankets in the hoods of the staff and guest kitchen cooking areas;
  - (d) natural gas storage tanks for cooking must be located outside the kitchens (staff and guest) at a minimum of 20 meters distance. Kitchens should be equipped with easily accessible emergency cut off valves (painted in red). Storage tanks should be fenced off/placed in secure housing;
  - (e) all footpaths in the lodge complex must be lit so as to ensure safe evacuation in the event of nighttime emergencies;

- (f) an outdoor assembly point should be identified and guests and staff made aware of the location;
  - (g) establishment of a fire break around the lodge, design to be identified by the project Architect; and
  - (h) provision of fire safety training to all staff.
- all fuel storage tanks must be provided with secondary containment structures.
  - the Company, with the LVC, must consult the Wildlife Division to identify interim approaches to operationalize the WMA ahead of finalisation of legislation and national guidelines;
  - the Company must develop a management plan (including by-laws) for the proposed WMA prior to operationalization of the WMA;
  - training and awareness raising to build capacity within the LVC and the village community so as to ensure that they attain the necessary legal and financial skills to effectively manage WMA operations and income from lodge and WMA operations;

Table 1 summarizes the recommended mitigation measures, the key actors and time frame for mitigation implementation.

**TABLE 1: KEY MITIGATION ACTIVITIES, ACTORS AND TIMEFRAME FOR THE PROPOSED MITIGATION IMPLEMENTATION**

ACTIVITY	ACTOR(S)	TIME FRAME
1. Consultation and information sharing among the village community on the proposed project.	LVC	Immediately and as an ongoing process.
2. The Company to engage an NGO or a Community Relations Person (CRP) (and set up program for training/awareness raising and community development planning and managing trust fund.	Company/LVC/NGO/CRP	Before the end of December 2000.
3. Implement program prepared under activity No.2 including capacity building among LVC and village community on business, legal and contractual matters	NGO	After activity No.2 and continuous but before July 2001.
4. LVC and BHL engage NGO and consider other options for operationalizing the project in the absence of legislation and national guidelines	LVC, BHL, TCCL, AWF/PORI, WD, Monduli District Authorities, TNP, TANAPA	Immediately, but not later than end of July 2001.
5. Resolve land tenure/use issues between Bundu's game hunting activities and WMA.	WD, TANAPA, Monduli District Council, LVC, TCCL AWF/PORI	Immediately and as an ongoing process.
6. Undertake awareness raising and capacity building on establishment and management of WMAs	LVC, BHL, AWF/PORI	After Activity 4
7. Suggest to TANAPA that they undertake a General Management Plan/Strategic Environmental Assessment for Tarangire NP	BHL and LVC	Immediately
8. Consult and involve relevant stakeholders	TCCL, LVC, CORDS	After Activity 1 and 2
9. Carry out baseline survey of resources in the planned WMA and establish indicators of change for monitoring	BHL, AWF/PORI	After acquisition legal ownership of WMA area
10. Implement the WMA.	BHL, TCCL, LVC, NGOs, Contractor	After activity 6

**TABLE 2: KEY ENVIRONMENTAL MITIGATION COSTS**

<b>IMPACT</b>	<b>MITIGATION MEASURE</b>	<b>MITIGATION COST</b>
Soil erosion	Re-vegetation of exposed surfaces; lining of water-receiving surfaces; mulching of vulnerable surfaces.	Minor cost
Surface/ground water pollution	<ul style="list-style-type: none"><li>• Transportation and composting vegetable wastes</li><li>• Non-vegetable solid waste taken to Arusha for re-cycling or safe disposal</li><li>• Desludging of septic tank, if applicable, every after seven years</li></ul>	<ul style="list-style-type: none"><li>• Approx. \$700 per annum. Cost counterbalanced by profits from vegetable gardening</li><li>• Cost of delivery of non-vegetable solid wastes to Arusha, approx. \$3000 per annum</li><li>• Approx. \$60 per annum</li></ul>
Risk of inadequate water supply from groundwater and/or rainwater collection	<ul style="list-style-type: none"><li>• Introduce trucking of water from Makuyuni or Naitolia and investigate, by way of independent hydrogeologists, availability of other borehole sites.</li></ul>	<ul style="list-style-type: none"><li>• Approx.\$7,000 per annum.</li></ul>
Accumulation of spoil material	<ul style="list-style-type: none"><li>• Immediate disposal by incineration at site or burying</li></ul>	<ul style="list-style-type: none"><li>• Minor cost</li></ul>

**MONITORING REQUIREMENTS**

Baseline monitoring will entail taking measurements of environmental parameters during a representative pre-project period in an attempt to determine the nature and ranges of natural variation and where possible to establish processes of change in order to provide baseline data for future monitoring. This monitoring will be included as part of WMA management. This will include:

- pre-project monitoring of general habitat variation (including fire occurrences and extent) between wet season and dry season;
- assessment of animal species population dynamics during the dry and wet season;
- assessment of the current status of wetland/water course/spring resources (parameters for monitoring should include, but not necessarily limited to species change, water quantity and quality).

**TABLE 3: MONITORING OF IMPACTS AND COSTS**

<b>MONITORING ISSUE</b>	<b>WHO SHOULD MONITOR</b>	<b>PARAMETER TO BE MONITORED</b>	<b>HOW TO MEASURE</b>	<b>FREQUENCY</b>	<b>APPROX. COST</b>
Borehole water	Regional water engineer	Water quality and quantity	Laboratory tests and pump tests	Annually	\$250
Habitat change	NGO/Independent consultant	<ul style="list-style-type: none"> <li>Plant diversity and soils</li> <li>Wetland water quality/quantity</li> </ul>	<ul style="list-style-type: none"> <li>Ecological surveys</li> <li>Field measurements, Laboratory tests</li> </ul>	Annually	\$4,500
Aquatic (wetland) biodiversity	NGO/Independent consultant	Population/species dynamics and diversity	Ecological techniques	Annually	\$1,500
Terrestrial biodiversity change	NGO/Independent consultant	Population/species dynamics and diversity	Ecological techniques	Annually	\$1,500
Change of local economy	Monduli District Council, LVC, BHL	No. of employees coming from Lolkisale; Social services established in the village	Check the list of employees	Quarterly	\$200 p.a.
Effective waste disposal systems	Monduli District Health Officer	Functioning septic and soakage pits; Compliance with sewage/drainage systems	Visits and reports	Annually, at the end of the dry season	Minor
Immediate/appropriate disposal of spoil material	Monduli District Health Officer	Absence of heaps of unattended spoil material	Visits and reports	Annually, at the end of the dry season	Minor
Contingency measures to deal with fire hazards	Monduli District Natural Resources Officer	Permanent/well maintained fire break; fire extinguishers in place	Visits, inspection and reports	Once a year during dry season	Minor
Stakeholder involvement	NGO/Independent consultant	Institutions involved/consulted	Consultation, reports	Annually	Minor
Awareness raising	NGO/Independent consultant	Number of meetings held	Observation, consultation, reports	Annually	Minor
Capacity building	NGO/Independent consultant	Number people trained	Consultation, reports	Annually	Minor
Dispute/boundary resolution	LVC, District Authorities	Meetings	Consultation, reports	Annually/as necessary	Minor

## **WMA Environmental Management Plan (EMP) Objectives**

The basic objectives of the WMA EMP will be as follows:

- to promote preservation of the wild lands including wetlands and meet GEF criteria within the planned WMA and Boundary Hill Lease area;
- An essential step in the management of the WMA is to identify estimates of carrying capacity and identify specific factors likely to constrain animal population sizes. Based on this ecological information, it may be possible to increase the carrying capacity for desired species, for example through establishment of watering points, or a carefully designed burning regime which promotes the development of quality pastures and prevents encroachment of bushland. It is also important to know how much investment should go into anti-poaching efforts and how much into wildlife habitat management.
- Actual management of wildlife populations requires considerable knowledge of population dynamics of the key species to determine desirable population structures for maximum efficiency. Although this type of information is available in wildlife management literature for some of the most popular savanna game species, for others, it is not, and may require undertaking fresh field studies. This will normally involve fieldwork often including specialists such as ecologist, botanist, etc. Together with the basic ecological and life-history knowledge, there is also need for a good monitoring program to track the progress of animal populations in the field. This may mean hiring, training or employing scouts and providing them with transportation and field equipment.
- The proposed project is aimed at increasing tourism within and outside the WMA. Thus, the environmental carrying capacity for tourists is as important as that of wildlife. Careful planning and citing of tourist facilities and roads is needed to maximize the number of tourists that can be accommodated without interfering with the wildlife and the naturalistic settings which are the main attractions.
- Other issues relating to environmental impact of tourism include sewage and garbage disposal and the adequacy of available water supplies to meet tourists' needs without depriving wildlife or local communities.

### Community Relations

BHL and LVC must appoint an NGO or a Community Relations Person to act as a liaison officer between the local community and BHL. Such a person would also assist communities in identifying and implementing development projects.

The candidate would have to be fluent in Maa (the Maasai language), Swahili and English. She/he would have to be a person of integrity, and must know development issues and aspirations of pastoralists of Lolkisale village. The community liaison officer should also be aware and sensitive to the needs of the small-scale agricultural farmers who are also members of Lolkisale village.

The key responsibility of such a person is to engage the Lolkisale community in a process that ensures their full, conscious, informed and active involvement at all stages of the project and beyond. The Company must cover the costs of maintaining such a person.

## Training

As the BHL, WMA and Lolkisale community development projects unfold, there are emerging training requirements which need to be addressed. They include:

- Training of the 2 village representatives on BHL Board in basic managerial skills. They need to be trained in areas such as negotiation skills, networking, personnel and financial issues; so that they can complement skills of the other directors and truly represent the interests of Lolkisale community.
- LVC and the Trust Fund (TF) committee need training in basic legal and contractual matters, so that they remain in the joint venture as an equal partner.
- Since the legitimacy of the whole project rests in the realization of community benefits through wildlife resources, it is important that community involvement takes place at the sub-village level. To do this, it is necessary to establish and train sub-village development committees to design and implement all development activities. They would work at the sub-village level to ensure that they provide a link between LVC and all the villagers in the sub-village. The interests of the sub-villagers must be reflected and represented in all other levels of the structure of the Trust Fund, LVC and BHL.
- WMA is a new concept in Tanzania and as such there are no models in the country from which LVC can learn. The project should engage a competent person/NGO in training LVC in basic WMA concepts and issues. Study tours to areas where WMA exist and operate (in Tanzania and Kenya) could be organized. After the training and the visit, lessons learnt should be transferred to the wider Lolkisale community.
- LVC and TF committee should also be trained in gender issues and ensure that community development projects are designed, implemented and maintained in a gender balanced approach.