Millennium Challenge Account
Namibia Compact:
Volume 6: Thematic Analysis
Report – Education

NAMIBIA STRATEGIC ENVIRONMENTAL ASSESSMENT

Task Order under the Project Development, Project Management, Environmental and General Engineering ID/IQ Contract No. MCC-06-0087-CON-90, Task Order No. 02

Submitted to:
MCC Washington and MCA Namibia

Submitted by:
ARD
159 Bank Street, Suite 300
Burlington, Vermont 05401 USA
Telephone: (802) 658-3890
Facsimile: (802) 658-4247
E-mail: ard@ardinc.com

November 7, 2008
This report is part of a 6-volume set:

- Volume 1: Phase II Strategic Environmental Assessment
- Volume 2: Background Documents
- Volume 3: Thematic Analysis Report – Livestock
- Volume 4: Thematic Analysis Report – Indigenous Natural Products
- Volume 5: Thematic Analysis Report – Tourism
- Volume 6: Thematic Analysis Report – Education
This report is part of a six-volume set (see below). The main report (Volume 1) is a synthesis of the environmental and social analyses and the report recommendations. Background documents, applicable to all reports, are provided in Volume 2. Given that implementation will be led by sector institutions, the more detailed thematic (sector-specific) analyses are provided in separate volumes. Each thematic analysis report (TAR) includes the main tools that will be useful during the implementation phase.
# TABLE OF CONTENTS

Acronyms and Abbreviations .................................................................................................................. iii
Preface ....................................................................................................................................................... vii

1.0 **Introduction** ................................................................................................................................................. 1
   1.1 Theme Rationale ............................................................................................................................................. 2
   1.2 Proposed Theme Activities ......................................................................................................................... 2
   1.3 Spatial Extent of the Component Activities ............................................................................................ 3
   1.4 Expected Outcomes ................................................................................................................................... 5

2.0 **Current Situation** ......................................................................................................................................... 7
   2.1 Institutional Framework ............................................................................................................................. 7
      2.1.1 Ministry of Education .......................................................................................................................... 7
      2.1.2 Regional Government ......................................................................................................................... 9
      2.1.3 Local Government ............................................................................................................................ 9
      2.1.4 Nongovernmental Organizations and Donors ................................................................................ 10
      2.1.5 Private Sector .................................................................................................................................... 11
   2.2 Policy and Legal Framework .................................................................................................................... 12
   2.3 State of Education Sector ......................................................................................................................... 13
      2.3.1 Status/Description of Primary and Secondary Schooling ............................................................... 13
      2.3.2 Status/Description of Tertiary Education in Namibia ....................................................................... 17
      2.3.3 Status/Description of Vocational Training in Namibia ................................................................... 18
      Total 18
      2.3.4 Status/Description of Resource Centers and Libraries .................................................................... 19
      2.3.5 Key Gaps/Shortcomings in the Education Sector ............................................................................. 21
      2.3.6 GRN and Donor Coordination ......................................................................................................... 22

3.0 **Stakeholder Issues and Concerns** ......................................................................................................... 25

4.0 **Impact Assessment** ................................................................................................................................... 27
   4.1 Project Description ................................................................................................................................... 27
      4.1.1 Schools .............................................................................................................................................. 27
      4.1.2 Community Skills Development Centers ......................................................................................... 27
      4.1.3 Regional Study and Resource Centers ............................................................................................ 28
      4.1.4 Strengthening the HAMU ............................................................................................................... 28
   4.2 Need for Impact Assessment ..................................................................................................................... 28
   4.3 Impact Assessment Methodology ............................................................................................................ 29
   4.4 Discussion of Impacts ............................................................................................................................... 30
      4.4.1 Construction and Renovation of Schools, Teacher Houses, COSDECs, and RSRCs ................. 30
      4.4.2 Education Project Implementation and Operation of Schools, COSDECs, and RSRCs .......... 31
      4.4.3 Summary of Impact Assessment .................................................................................................... 32

5.0 **Beneficiary Analysis** .................................................................................................................................. 33
   5.1 Gender and Social Issues ......................................................................................................................... 33

6.0 **Resettlement Needs** .................................................................................................................................. 35

7.0 **Linkages, Synergies, and Cumulative Impacts** ...................................................................................... 37
   7.1 Key Cumulative Impacts .......................................................................................................................... 37
   7.2 Linkages and Secondary Effects of Education Project Activities ......................................................... 39
   7.3 Opportunities for Optimizing Synergy with Other Program Components ........................................... 41
   7.4 Cumulative and Antagonistic Effects of the Education Project with other Program Components .... 42

8.0 **Conclusions and Recommendations** .................................................................................................... 45
8.1 Sustainability Analysis ........................................................................................................45
  8.1.1 Key Conditions/Requirements for Success .................................................................45
8.2 Recommended Mitigation Measures ....................................................................................48
  8.2.1 Environmental Safeguards for Construction Activities ..............................................48
  8.2.3 Other Recommendations for Vocational and Library Program
         Improvements ..................................................................................................................49
8.3 Recommended Enhancements .............................................................................................50
8.4 Key Indicators of Success ...................................................................................................51
8.5 Project Level Environmental Guidelines ..........................................................................51

9.0 List of References ..............................................................................................................53

KEY IMPLEMENTATION TOOLS:

1. Social-Environmental Assessment Tool: Public Participation
2. Environmental Screening Questionnaire for Projects
3. Generic EMP for Building Design, Construction, and Operation of Non-Sensitive Sites
4. Generic EMP for Building Design, Construction, and Operation of Sensitive Sites
### Acronyms and Abbreviations

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>BES</td>
<td>Basic Education Support</td>
</tr>
<tr>
<td>BIS</td>
<td>Basic Information Science</td>
</tr>
<tr>
<td>CBET</td>
<td>Competency Based Education and Training</td>
</tr>
<tr>
<td>CLS</td>
<td>Community Library Service</td>
</tr>
<tr>
<td>COSDEC</td>
<td>Community Skills Development Center</td>
</tr>
<tr>
<td>COSDEF</td>
<td>Community Skills Development Foundation</td>
</tr>
<tr>
<td>EIA</td>
<td>Environmental Impact Assessment</td>
</tr>
<tr>
<td>ELC</td>
<td>E-Learning Centre (Namibia)</td>
</tr>
<tr>
<td>ELS</td>
<td>Education Library Service</td>
</tr>
<tr>
<td>EMP</td>
<td>Environmental Management Plan</td>
</tr>
<tr>
<td>EMS</td>
<td>Economic and Management Science</td>
</tr>
<tr>
<td>ENP</td>
<td>Etosha National Park</td>
</tr>
<tr>
<td>ETSIP</td>
<td>Education and Training Sector Improvement Programme</td>
</tr>
<tr>
<td>GeSCI</td>
<td>The Global E-Schools and Communities Initiative</td>
</tr>
<tr>
<td>GRN</td>
<td>Government of the Republic of Namibia</td>
</tr>
<tr>
<td>HAMU</td>
<td>HIV/AIDS Management Unit</td>
</tr>
<tr>
<td>ICDL</td>
<td>International Computer Driving License</td>
</tr>
<tr>
<td>ICT</td>
<td>Information and Communication Technology</td>
</tr>
<tr>
<td>IDP</td>
<td>Integrated Development Plans</td>
</tr>
<tr>
<td>IIT</td>
<td>Institute of Information Technology</td>
</tr>
<tr>
<td>INP</td>
<td>Indigenous Natural Product</td>
</tr>
<tr>
<td>KfW</td>
<td>Kreditanstalt für Wiederaufbau</td>
</tr>
<tr>
<td>Lux Dev</td>
<td>Luxembourg Agency for Development Cooperation</td>
</tr>
<tr>
<td>MAWF</td>
<td>Ministry of Agriculture, Water, and Forestry</td>
</tr>
<tr>
<td>MCA</td>
<td>Millennium Challenge Account</td>
</tr>
<tr>
<td>MCC</td>
<td>Millennium Challenge Corporation</td>
</tr>
<tr>
<td>MET</td>
<td>Ministry of Environment and Tourism</td>
</tr>
<tr>
<td>MLS</td>
<td>Ministerial Library Service</td>
</tr>
<tr>
<td>MOBESC</td>
<td>Ministry of Basic Education, Sport, and Culture</td>
</tr>
<tr>
<td>MOE</td>
<td>Ministry of Education</td>
</tr>
<tr>
<td>MOU</td>
<td>Memorandum of Understanding</td>
</tr>
<tr>
<td>MRLG</td>
<td>Ministry of Regional and Local Government and Housing</td>
</tr>
<tr>
<td>MTI</td>
<td>Ministry of Trade and Industry</td>
</tr>
<tr>
<td>MWTC</td>
<td>Ministry of Works, Transport, and Communications</td>
</tr>
<tr>
<td>NAMCOL</td>
<td>Namibian College of Open Learning</td>
</tr>
<tr>
<td>NCA</td>
<td>Northern Communal Area</td>
</tr>
<tr>
<td>NCCI</td>
<td>Namibia Chamber of Commerce and Industry</td>
</tr>
<tr>
<td>NESE</td>
<td>National External School Evaluation</td>
</tr>
<tr>
<td>NETO</td>
<td>Namibian Education Technology Organization</td>
</tr>
<tr>
<td>NGO</td>
<td>Nongovernmental Organization</td>
</tr>
<tr>
<td>NIED</td>
<td>National Institute of Education Development</td>
</tr>
<tr>
<td>NLAS</td>
<td>Namibian Library and Archives Service</td>
</tr>
<tr>
<td>NPC</td>
<td>National Planning Commission</td>
</tr>
<tr>
<td>NOLNet</td>
<td>Namibian Open Learning Network Trust</td>
</tr>
<tr>
<td>NTA</td>
<td>National Training Authority</td>
</tr>
<tr>
<td>NTF</td>
<td>National Training Fund</td>
</tr>
<tr>
<td>NTTC</td>
<td>National Trade Testing Center</td>
</tr>
<tr>
<td>OECD</td>
<td>Organization for Economic Cooperation and Development</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>-------------</td>
</tr>
<tr>
<td>PMU</td>
<td>Project Management Unit</td>
</tr>
<tr>
<td>RSRC</td>
<td>Regional Study and Resource Center</td>
</tr>
<tr>
<td>SEA</td>
<td>Strategic Environmental Assessment</td>
</tr>
<tr>
<td>SIDA</td>
<td>Swedish International Development Agency</td>
</tr>
<tr>
<td>SME</td>
<td>Small and Medium Enterprise</td>
</tr>
<tr>
<td>SMME</td>
<td>Small, Medium, and Micro Enterprise</td>
</tr>
<tr>
<td>UNAM</td>
<td>University of Namibia</td>
</tr>
<tr>
<td>USAID</td>
<td>United States Agency for International Development</td>
</tr>
<tr>
<td>VIP</td>
<td>Ventilated Improved Pit-Latrine</td>
</tr>
<tr>
<td>VET</td>
<td>Directorate of Vocational Education and Training</td>
</tr>
<tr>
<td>VTC</td>
<td>Vocational Training Center</td>
</tr>
</tbody>
</table>
1. Millennium Challenge Account Namibia Compact

The Millennium Challenge Corporation (MCC) Namibia Program aims to reduce poverty by increasing the competence of the Namibian workforce, and by increasing the productivity of agricultural and non-agricultural enterprises in rural areas. The MCC investment will fund projects in education, tourism, and agriculture. The following are the objectives of these projects:

- The Education Project will improve the quality of the workforce in Namibia by enhancing the equity and effectiveness of basic, vocational, and tertiary education and of technical skills.
- The Tourism Project will grow the Namibian tourism industry with explicit targeting of income streams to conservancy households.
- The Agriculture Project will increase the total value added from livestock in the Northern Communal Areas (NCAs) and will increase income from INPs to the poor nationwide.

The Millennium Challenge Account (MCA) Compact was developed using an extensive consultative process. As stated in the MCA Namibia Compact, the Government of the Republic of Namibia (GRN) held consultations in all 13 regions of the country and began national level consultations in mid-2006. The process that the Strategic Environmental Assessment (SEA) team used was inspired by these thorough consultations, and is described below.

2. Strategic Environmental Assessment Phase II

The SEA of the MCA Namibia Compact followed the approach captured by the Organization for Economic Cooperation and Development (OECD) guidance (text box). The SEA team (1) gathered baseline information (Phase I and early stage of Phase II); (2) conducted theme-specific analyses (Phase II, see below); and (3) conducted a detailed cumulative impact analysis and identified linkages (SEA Phase II Report). Using this methodology, each successive step is supported by and builds on information previously gathered.

Phase I of the Social and Environmental Assessments to Inform Project Design provided much of the baseline information needed to assess MCA interventions in the tourism and livestock and rangeland sectors. Subsequent SEA analyses drew extensively on Phase I of the SEA. During Phase II, the SEA team gathered additional baseline information to fill in gaps in all sectors.

Phase II of the SEA was conducted in two parts:

1. Thematic analyses cover the main MCA Namibia Compact themes of livestock, indigenous natural products (INPs), tourism, and education. This volume is one of four Thematic Analysis Reports (TARs, Volumes 3–6 of the six volumes produced for Phase II of the SEA). Although INP and livestock activities are part of the MCA Agriculture Project, the SEA team treated them separately,

The OECD Development Assistance Committee SEA guidance defines SEA as “analytical and participatory approaches that aim to integrate environmental considerations into policies, plans, and programmes and evaluate the inter linkages with economic and social considerations.” The SEA process is not a fixed and prescriptive approach, but rather an umbrella approach using a basket of analytical and participatory tools. It is largely principles-based and adaptive, focused on strengthening institutions and governance, and tailored to a specific context.
given the differences in stakeholders, beneficiaries, and issues. The Livestock TAR includes activities related to land access and management.

(2) Building from the TARs, the second part of Phase II involved producing a full SEA, the core of which is an assessment of cumulative impacts (within themes, between themes, and between the Compact and other activities being implemented in Namibia) and linkages, and across MCA projects. The thematic analyses served as the basis for identifying, analyzing, and providing mitigation measures for cumulative impacts, and for identifying linkages among MCA projects that could strengthen the sustainability and success of each project.

2.1 Thematic Analysis Report Approach

To produce the reports, theme-specific teams were formed (which included inter-disciplinary as well as sector expertise). Thematic teams used a report format developed in the final SEA Phase I workshop. While all teams used the same format, it served as a guide and was not meant to restrict the teams’ analyses.

Each TAR includes a description of the theme’s current situation, policy and institutional framework, and stakeholder concerns specific to proposed Compact activities; potential environmental and social impacts of Compact interventions in the theme; and an initial assessment of cumulative effects, synergies, and linkages. Each TAR also includes theme-specific Key Implementation Tools—guidance and templates—for users in the field.

General Methodology

Thematic teams gathered information through interviews with key informants by reviewing existing documents and conducting fieldwork. The Livestock, Tourism, and INP thematic teams traveled to the NCAs (see below) to gather data for the impact assessment, and to supplement information gathered by the Stakeholder Consultation Team. In addition, a field team traveled to Angola to fill in information gaps, particularly in the livestock-rangeland sector.

The heart of the TAR is the environmental and social impact assessment discussion. The SEA team used a standard impact assessment matrix (see Volume 2, Background Documents), revised for the Compact and for the Namibia-specific situation. As the impact assessment process moved forward, lessons were shared among teams. The impact assessment process and the matrix were adapted based on this cross-fertilization. Volume 2 also includes a glossary of impact assessment terminology.

As illustrated by the matrix, Compact activities are assessed against a number of sustainability criteria, which are defined in Volume 2, Section 3. Each theme started the impact assessment process using the same criteria to assess environmental and social impacts. These criteria were revised slightly as each team saw fit. To provide various point of views, theme teams requested key informants to fill out the matrix on their own. This was factored into each team’s impact assessment process.

The matrix serves to highlight key impacts. But the core of the impact assessment process is the discussion that emanates from the matrix. Based on it, teams identified key negative impacts and determined their magnitude, spatial extent, duration of impact, probability of occurrence, and significance before mitigation or enhancement is applied.

Thematic teams then provided recommendations based on the impact assessment discussion. Recommendations include mitigation measures, enhancements, and guidance for implementation. These should be incorporated into Project designs, and into activity-level environmental impact assessments and
environmental management plans. *Mitigation measures* are required to minimize the negative impacts identified by theme teams. *Recommended enhancements*, while not required in terms of the Compact agreement/deliverables, can help improve project sustainability and success. Additionally, theme teams provided recommendations based on their expertise in specific sectors.

The Ministry of Environment and Tourism’s (MET) Screening Questionnaire for Projects, with which all MCA projects are required to comply, is included in the Key Implementation Tools section of the TARs.

**Theme-Specific Fieldwork**

- **The Livestock Theme Team** conducted a qualitative rangeland condition assessment in the NCAs. The methodology and findings are described in the Livestock Thematic Analysis Report and in Volume 2, Section 7. The assessment confirmed that most rangeland in the NCAs is highly degraded.

- **The INP Theme Team** conducted site visits to the NCAs and to Katutura Artisans Project. In the NCAs, the team visited Ootanga Oil Producers, the Eudafano factory, and the Eco-regional Satellite Centre in Eenhana. The team used standardized questionnaires (see INP Implementation Tool 1) to gather information in the field. The INP team also held a roundtable in Windhoek, where leaders from Namibia’s INP sector discussed environmental and social effects of the MCA Namibia INP Activity and provided recommendations for strengthening it.

- **The Tourism Theme Team** conducted a field trip to the main proposed investment areas in Etosha National Park (ENP). The main purpose of the trip was to inspect the sites for the proposed Ombika and Otjovasandu staff villages, visit the proposed tourism concession areas in northern and western Etosha, and facilitate meetings with MET staff. At these meetings, MET provided input into the impact assessment process and ideas about how best the Compact could be enhanced. The trip also enabled the SEA team to examine the various management and development plans, zonation, and other maps that have been developed by ENP staff over the past few years. No Compact-specific field trips were undertaken to conservancies because the recipient conservancies for MCA support have not yet been identified. However, a number of conservancies were visited by the team opportunistically (while on other missions), and the authors of the tourism report have intimate and recent knowledge of virtually all the conservancies in Namibia. They have previously visited the likely sites for the lodges and concessions in the northeast parks.

- **The Education Theme Team** reviewed and adapted best practices in school building construction and operation and incorporated recommendations into the Education TAR. No fieldwork was conducted.

**Stakeholder Consultation**

The full Stakeholder Consultation Report is included in Volume 2, Background Documents. Two stakeholder consultation teams held focus group meetings and interviewed key informants in the NCAs. The stakeholder teams used standardized questionnaires incorporating issues provided by each theme team. The Stakeholder Consultation Report contains the locations visited by the stakeholder consultation teams, the questionnaire, and an in-depth discussion of findings. Thematic Analysis Reports incorporate specific stakeholder concerns and use this information in the impact assessment of the theme.
1.0 INTRODUCTION

As a middle-income country, Namibia aspires to make the transition to a higher value-added, “knowledge-based” economy. However, an acute skills shortage within the country’s labor force currently impedes the realization of this national development goal. A legacy of severe historical inequities in access to education, coupled with an inefficient and ineffective education and training system, continues to affect the quality of Namibian graduates at the primary, secondary, and tertiary levels (MCC Compact, 2008).

Despite important advancements within the education sector since independence—notably the achievement of a national basic literacy rate over 80%, a doubling of the number of students completing junior secondary education, and a doubling of the number of teachers meeting standard qualifications—considerable challenges remain in Namibia’s quest to cultivate an adequately skilled workforce to meet market demands. Although a significant National Budget allocation toward the education sector (averaging approximately 22% per annum) has contributed to noteworthy outcomes in the recent decade, major challenges currently face education in Namibia, including:

- Inadequate alignment of qualified teachers across schools and subjects;
- Severe resource gaps (e.g., books and equipment), particularly in rural areas;
- Insufficiency and unevenness in distribution of educational assets (e.g., general and specialized infrastructure and premises);
- Gaps in available skills training in relation to private sector demand; and
- Unsustainable, costly approaches to tertiary finance that do not fulfill demands and needs.

The Government of the Republic of Namibia (GRN) recognizes these constraints and four years ago embarked on a major diagnostic exercise with its donor partners, which culminated in the formulation of a comprehensive reform strategy for the education sector (the Education and Training Sector Investment Programme [ETSIP]) that covers all of the investments and policy reforms needed over the next 20 years.

The key elements of the ETSIP strategy are: (a) pro-poor expansion of high-quality senior secondary education, vocational education and training, tertiary education, and training programs; (b) building system equity, quality, and efficiency; (c) strengthening system delivery capacity; (d) strengthening the system’s response to HIV/AIDS; (e) strengthening the national knowledge and innovation system; and (e) creating an enabling environment for the development of lifelong learning (ETSIP, 2006).

Within the context of the GRN’s transformational education reform program to create a knowledge-based economy, Millennium Challenge Corporation (MCC) funding will support key gaps within ETSIP as well as complementary measures to meet current exigencies and ensure sustainable results. Through the Education Project, the Millennium Challenge Account (MCA) will provide approximately $145 million to support the education and training system in Namibia over five years. Encouraging progress towards ETSIP goals, the MCC interventions are focused on key weaknesses in the delivery of primary, secondary, vocational, and tertiary education, comprising both select infrastructure needs and technical assistance to achieve institutional reforms. As such, MCA will support investments to alleviate acute infrastructure and resource constraints that impinge upon the daily learning environment of adolescent and adult learners (near-term improvements), in tandem with technical assistance to develop and implement new policies and procedures that address the underlying causes of current sector deficiencies (systemic reforms) (MCC Compact, 2008).
1.1 Theme Rationale

In view of the background described above, the objective of the MCA Education Project is to improve the quality of the workforce in Namibia by enhancing the equity and effectiveness of basic, vocational, and tertiary education and technical skills. Specifically, the Education Project aims to increase the pool of skilled labor by helping to create a more efficient and effective education system that will benefit approximately 1,000,000 young Namibians, ultimately increasing their opportunities for employment.

1.2 Proposed Theme Activities

The MCA Education Project has six distinct activities, which are outlined below.

1. Improving the quality of education. The aims of this activity are to improve the quality of primary, junior secondary, and senior secondary education, mainly in under-served areas of northern Namibia, and to increase the number of students who proceed to senior secondary education. This activity includes the following interventions:
   - Rehabilitating and renovating infrastructure (including teacher housing) and school equipment in approximately 47 primary and secondary schools;
   - Providing technical assistance to the Ministry of Education (MOE) to improve school maintenance and enhance school administration at regional and local levels;
   - Providing policy, operational, and administrative support for schools and teacher colleges; and
   - Funding improvements in science and computer training facilities at teacher training colleges.

2. Improving vocational and skills training. The objectives of this activity are to help alleviate skills constraints to enterprise growth and productivity and to ensure that disadvantaged and vulnerable groups, school leavers, and adult learners acquire competencies that are needed for gainful employment and income-earning opportunities. The initiatives will support key ETSIP and GRN objectives of mobilizing enhanced resources towards vocational technical education and skills training, and supporting the efforts of the new National Training Authority (NTA) to establish a system that pays for performance and outputs. This activity includes the following interventions:
   - Constructing or renovating nine community skills development centers (COSDECs);
   - Assisting the NTA to establish and manage a National Training Fund (NTF) that provides guidance on issues such as NTF governance, and determines selection criteria for grant awards, financial sustainability, and deployment of funding; and
   - Providing competitive grant funding for priority vocational training programs, as transitional support before the NTF achieves operational capacity and resources. Specific training opportunities have been identified related to tourism.

3. Improving access to and management of textbooks. A priority component within the ETSIP Phase 1 strategic objective of improving system quality and relevance is improving the access to, and procurement and distribution of, textbooks for general education in Namibia. Accordingly, this activity focuses on upgrading access and management through operational support and reforms to establish more transparent and competitive acquisition processes for new textbooks, as well as ensuring adequate distribution and management procedures. More specifically, this includes funding for:
   - Operational support and reforms in the textbook acquisition process;
   - Science, math, and English textbooks for Grades 5–12 and classroom improvements; and
   - A system for monitoring textbook supply and demand.
4. **Investing in Regional Study and Resource Centers.** A goal of GRN and ETSIP is to expand information resources and availability to rural and under-served communities. In support of this GRN objective, MCA will provide funding to:
   - Construct three regional study and resource centers (RSRCs) to improve access to sources of information, training materials, and study facilities; and
   - Provide technical assistance and training to RSRC staff.

5. **Expanding and improving access to, and equity and sustainability of, tertiary education finance.** The primary objective of this activity is to assist the MOE to develop a revised scholarship and loan program that will increase effectiveness in matching labor market demand and supply for technical, undergraduate, and graduate degree recipients, while reducing the program’s unit costs and improving the recovery rate of loans. This activity involves two sub-activities:
   - Contributing to the design of a revised scholarship and loan system for technical and tertiary education, within the context of planned reforms in tertiary finance and policies developed by the NTA that are related to vocational education and training sector student support; and
   - Contributing to the development of a financially sustainable and equitable system for student financial assistance.

6. **Providing cross-project support for the HIV/AIDS Program.** In support of the goal of increased HIV/AIDS awareness among youth, adolescents, and adult learners within Namibia, MCA will support a consultant to provide technical assistance to MOE’s HIV/AIDS Management Unit (HAMU) in the areas of developing and implementing core programs and expanding HIV/AIDS planning and support to teachers into all education activities. In addition, the contractor working with HAMU will also develop and implement HIV/AIDS awareness and prevention plans for civil works activities at the 47 schools, COSDECs, and RSRCs. The plans will be targeted at construction workers, school populations, and communities where the construction activities will occur.

1.3 **Spatial Extent of the Component Activities**

While the education project activities are national in extent, the activities described above will occur in those areas that have historically been under-served and that have been identified in consultation with GRN as being most in need of the MCA interventions.

Of the 47 schools to be constructed/expanded/renovated, 36 (64%) are located in the Northern Communal Areas (NCAs), five in Khomas region, and three each in Omaheke and Otjozondjupa regions (Figure 1.1).

Of the nine COSDECs targeted as part of the Education Project, four will be new and five will involve renovations of existing buildings. The five COSDECs to be renovated are at Tsumeb, Ondangwa, Opuwo, Otjiwarongo, and Rundu. The four new COSDECs will be located in the towns of Gobabis, Lüderitz, Walvis Bay, and Windhoek (Figure 1.1). The specific site locations were identified as particular areas of employment potential, as the COSDEC management (Central Support Unit) undertakes routine market analyses to determine whether there is sufficient employment demand to establish a center or open a new training program within an existing center.

The RSRCs will be located in the northern Namibian towns of Halao Nafidi, Gobabis, and Oshakati (Figure 1.1).
A breakdown of the education construction projects by region is shown in Table 1.1. As shown in this table, all the regions in Namibia will benefit to a greater or lesser extent from the project except for Caprivi and Hardap.

Table 1.1 Location of Education Project Activities by Region

<table>
<thead>
<tr>
<th>Region</th>
<th>Capital</th>
<th>Population 2001</th>
<th>Area (km²)</th>
<th>Population density/ km²</th>
<th>Combined schools</th>
<th>Secondary schools</th>
<th>COS-DECs</th>
<th>RSRCs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caprivi</td>
<td>Katima Mulilo</td>
<td>79,826</td>
<td>14,528</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Erongo</td>
<td>Swakopmund</td>
<td>1,000,663</td>
<td>63,579</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Hardap</td>
<td>Mariental</td>
<td>68,249</td>
<td>109,651</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Karas</td>
<td>Keetmanhooip</td>
<td>69,329</td>
<td>161,215</td>
<td>0.5</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Kavango</td>
<td>Rundu</td>
<td>202,694</td>
<td>48,463</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Khomas</td>
<td>Windhoek</td>
<td>250,262</td>
<td>37,007</td>
<td>7</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>
### 1.4 Expected Outcomes

The specific anticipated program results relating to education are set out in the MCA Namibia Compact with the GRN (20 June 2008):

- A higher quality of education for approximately one million primary and secondary school learners across Namibia due to an improved delivery system for textbooks;
- Access to financing for tertiary education for at least 60% of qualifying applicants;
- Training at the COSDECs of up to 47,000 low income individuals who are either unemployed and/or unskilled;
- Training of more than 2,600 individuals in the tourism sector; and
- Higher quality of education for approximately 41,700 learners primarily in rural communities, which is expected to result in higher lifetime income for those students.
2.0 Current Situation

2.1 Institutional Framework

2.1.1 Ministry of Education

The education sector falls under the MOE. The MOE’s mission is as follows:

“We, in partnership with our stakeholders, are committed to providing all Namibian residents with equitable access to quality education programs to develop the abilities of individuals to acquire the knowledge, understanding, skills, values, and attitudes required throughout their lifetimes.” (MOE Web site)

The MOE has four main departments: Schools and Formal Education; Policy and Administration; Lifelong Learning; and Tertiary Education, Science, and Technology. Within these departments are several directorates (Figure 2.1). The 1,641 schools, 280 clusters, and 56 circuits report through the Schools and Formal Education Department. The four vocational training centers report through the Department of Lifelong Learning. Universities, polytechnics, and teacher colleges report to, or are coordinated by, the Tertiary Education, Science and Technology Department.

In addition, the MOE has recently embarked on a program of decentralization to reassign school administration to the regions. This has resulted in the creation of 13 regional directorates (see Section 2.1.2).

The National Institute of Educational Development (NIED) is of particular importance in the improvement of educational quality. The NIED is located within the Department of Schools and Formal Education (Figure 2.1). Its four functions are: (1) curriculum development for schools and colleges; (2) pre-service/in-service professional development for teachers; (3) materials development; and (4) research primarily related to curriculum monitoring and evaluation. NIED is structured to link with national and regional teacher professional development committees, teacher advisers, and teacher resources centers—one per three or four clusters. A new policy is under development dealing with pre- and in-service training, which may or may not affect the current professional development structure. There is an emerging interest in providing additional programs for training and possibly certification of school principals. For now, principal training is provided primarily through an induction program.

One of the key initiatives of the MOE is ETSIP. In 2005, the MOE launched the program to increase the efficiency of the education and training system. ETSIP aims to increase the number of skilled and employable Namibians through a strong focus on improving educational quality. ETSIP includes the following sub-components: Early Childhood Development and Pre-Primary Education, General Education, Vocational Education and Training, Tertiary Education and Training, Knowledge and Innovation, Information and Communication Technologies in Education, HIV/AIDS, and Capacity Development. The MCA Education Project aims to support this program.
Figure 2.1 Organogram of the Ministry of Education

- Minister
  - Deputy Minister
  - Permanent Secretary
  - 13 Regional Directorates
  - Deputy Permanent Secretary
  - Subdivision Internal Audit
  - Department: Schools and Formal Education
    - Directorate: National Institute of Educational Development
    - Directorate: National Examinations and Assessment
    - Directorate: Programme and Quality Assurance
  - Department: Policy and Administration
    - Directorate: Finance
    - Directorate: General Services
    - Directorate: Planning and Development
  - Department: Lifelong Learning
    - Directorate: Adult Education
    - Directorate: Namibia Library and Information Service
    - Directorate: Namibia Qualification Authority
    - Directorate: Vocational Education
  - Department: Tertiary Education, Science and Technology
    - Directorate: Research, Science and Technology
    - Directorate: Namibia National Commission for UNESCO
    - Directorate: Higher Education
    - Directorate: Higher Education
2.1.2 Regional Government

After independence, Namibia was divided into 13 political regions headed by regional governors but only seven education regions headed by directors of education. However, in compliance with the government’s policy of decentralization, the MOE established regional directorates in all 13 regions in 2003. While the MOE has overall responsibility for the education system, it is the regional education offices that shoulder the bulk of education policy and programs implementation on a day-to-day basis, while working closely with the schools and communities in their respective regions. Each regional directorate sets its own specific aims and objectives in keeping with the overall mission of the MOE.

The regional offices are responsible for the oversight of circuit inspectors and teacher advisors. These two categories of professional staff provide the link needed to transform the system to one of quality, especially at the school and classroom levels. Each selected school principal is assigned to a cluster of approximately six principals and serves on the management team led by the circuit inspector. This allows the accurate flow and use of information at each stage from the school to the regional levels. Table 2.1 presents the numbers of schools, clusters, and circuits for each region.

Table 2.1 Regions from Largest to Smallest in Number of Facilities

<table>
<thead>
<tr>
<th>Region</th>
<th># Schools</th>
<th># Clusters</th>
<th># Circuits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kavango</td>
<td>329</td>
<td>57</td>
<td>9</td>
</tr>
<tr>
<td>Omusati</td>
<td>268</td>
<td>44</td>
<td>8</td>
</tr>
<tr>
<td>Ohangwena</td>
<td>232</td>
<td>35</td>
<td>6</td>
</tr>
<tr>
<td>Oshikoto</td>
<td>178</td>
<td>28</td>
<td>5</td>
</tr>
<tr>
<td>Oshana</td>
<td>131</td>
<td>22</td>
<td>4</td>
</tr>
<tr>
<td>Caprivi</td>
<td>97</td>
<td>20</td>
<td>5</td>
</tr>
<tr>
<td>Khomas</td>
<td>78</td>
<td>12</td>
<td>4</td>
</tr>
<tr>
<td>Kunene</td>
<td>52</td>
<td>14</td>
<td>3</td>
</tr>
<tr>
<td>Hardap</td>
<td>57</td>
<td>11</td>
<td>3</td>
</tr>
<tr>
<td>Otjozondjupa</td>
<td>61</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>Erongo</td>
<td>61</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>Karas</td>
<td>47</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>Omaheke</td>
<td>42</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>Head Office</td>
<td>8</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>1,641</strong></td>
<td><strong>280</strong></td>
<td><strong>56</strong></td>
</tr>
</tbody>
</table>

Budgeting and financial management still remain at the central level, however, which has resulted in many delays in staff contract approvals and building contractor arrangements, as well as difficulties in obtaining maintenance work approvals.

2.1.3 Local Government

The Ministry of Regional and Local Government and Housing (MRLHG) is the lead agency for the implementation of the above-mentioned decentralization policy at all levels—national, regional, and local. In carrying out this responsibility, the ministry is required to fine-tune it where necessary, develop policy implementation strategies and programs, advocate the policy within and outside the government, and monitor broad implementation of the policy. In addition to spearheading the policy’s implementation, MRLHG remains responsible for legislation and policy issues related to housing, regional and town planning, regional government, local authorities, and administration. Thus, the local authorities play an
important role in school, COSDEC-, and RSRC-related planning issues such as zoning, utility services, safety and security, signage, road maintenance, and other municipal functions. Close liaison with the MRLHG will be necessary to identify suitable housing sites (if not already within the school grounds), obtain planning approvals, and ensure provision of all necessary services (Namibia Local Government Web site).

2.1.4 Nongovernmental Organizations and Donors

The education sector receives much attention from national and international nongovernmental organizations (NGOs) and donors. Some of those groups involved in Namibia are described below (MOE Web site).

The Luxembourg Agency for Development Cooperation (Lux Development) has funded the Zambezi Vocational Training Centre in Caprivi, which will complement the COSDECs being planned as part of the MCA Namibia Program in other parts of the country. Lux Development also donated library books, computers, electronic equipment, and library furniture to the MOE in February 2008. These goods, valued at €200,000 (N$ 2,232,080), are earmarked for 11 schools in the Caprivi and Omaheke regions. The schools were selected by Lux Development in consultation with the ministry’s Directorate of National Library and Archives Services. It is not clear if the beneficiary schools in the Omaheke region are the same or different to the schools being targeted by the MCA Namibia Program. The latter has not targeted any schools in Caprivi.

A recent regional education report indicated that only a third of Namibia’s sixth grade students had acquired needed reading and math skills. The US Agency for International Development (USAID) is helping Namibia improve the quality of English, math, and science instruction for students in Grades 1–7 by providing 4,000 teachers with training on new teaching methods. School improvement programs piloted by USAID were so successful that the Namibian government decided to expand them nationwide. These initiatives will complement the MCA Namibia Funding Improvements in Science and Computer Training Facilities at Teacher Training Colleges activity.

To address the problems in the education sector caused by the HIV/AIDS epidemic, USAID provided educational support to 5,000 orphans and vulnerable children while training 1,400 principals and education administrators on HIV/AIDS mitigation strategies. Again, this initiative complements the cross-cutting MCA Namibia support for the MOE’s HAMU.

In addition, the MOE received a donation in February 2008 of six laptops and ten digital cameras from the USAID Basic Education Support (BES) Project. Beginning in March 2007, the ministry provided five laptops and office supplies to National External School Evaluation (NESE) teams for use while conducting external regional school evaluations.

The governments of Finland and Sweden, both long-term donors to the Namibian education sector, have recently concluded their development funding agreements because the country is now classed as a “middle-income” country and, as such, is no longer considered a target for the funding. However, cooperation and technical assistance will continue in areas of mutual interest.

GTZ has provided funding for the construction of the Windhoek Vocational Training Centre, which complements the COSDEC component of MCC funding. Other projects supported by GTZ address interventions identified in this report (see Section 7), namely the issues of affordable housing and service delivery in urban areas and promotion and support for small and medium enterprises (SMEs).
In April 2006, the Namibian E-Learning Centre (ELC) was formally launched through a partnership between the Namibian Open Learning Network Trust (NOLNet) and InWEnt (Capacity Building International, Germany). Established under the auspices of NOLNet, the ELC functions as the service hub for e-learning activities in Namibia and beyond.

The Global e-Schools and Communities Initiative (GeSCI) was founded by former United Nations Secretary General Kofi Annan’s Information and Communication Technology (ICT) Task Force, and its work is closely aligned with the Millennium Development Goals of achieving permanent, measurable reductions in global poverty and deprivation by 2015. GeSCI’s mission is based on the premise that education changes lives. Schools empowered with information and communications technologies can offer better education to millions of children in developing countries by linking them to information, opportunities, and the global community.

The International Computer Driving License (ICDL) Foundation is an international, non-profit organization established to raise the level of computer skills in Africa. The ICDL is the world’s leading end-user computer skills certification program and is an internationally recognized qualification designed specifically for those who wish to gain a benchmark qualification in computing to develop ICT skills and enhance career prospects.

The Namibian Education Technology Organization (NETO) is a local non-profit organization that aims to support schools in their endeavors toward ICT integration. NETO trains teachers in ICT integration skills for teaching and learning, and guides school administrators to properly support ICT at their schools.

Peace Corps/Namibia has made substantial contributions to the reform of the educational system in teacher training, classroom teaching, and subject matter support for teachers, especially in English, mathematics, ICT, and science. Many education volunteers are also directly engaged in initiating community activities for their students, such as establishing libraries and computer labs, boys’ and girls’ clubs, HIV/AIDS clubs, and computer classes for students, teachers, and the community. Additionally, to support the national response to HIV/AIDS, volunteers focus on capacity building at regional and school levels.

WorldTeach is a non-profit NGO that provides opportunities for individuals to make a meaningful contribution to international education by living and working as volunteer teachers in developing countries. WorldTeach volunteers in Namibia work as English, mathematics, science, and computer studies subject teachers in primary and secondary schools and adult training facilities. In addition to their subject teaching, volunteers are also encouraged to serve as HIV/AIDS resource teachers.

2.1.5 Private Sector

As with the NGOs and donors, the MOE has formed partnerships with a number of private companies. Some of these are described below (MOE Web site).

In partnership with Bank Windhoek, Shell Namibia, Namibia Association of Norway, and the United Nations Industrial Development Fund, the MOE recently launched subject and promotional materials to introduce Entrepreneurship as a new subject of learning to be introduced in all schools in 2008, starting with Grades 5 and 8. The introduction of the subject is part of ETSIP, which aims to equip learners with the necessary skills to start their own small and medium enterprises.

In 2007, the Electricity Control Board donated N$20,000 to ETSIP as part of the N$50,000 pledged at last year’s Roundtable Pledging Conference. The rest of the pledge will be paid out of the next three years.
CECS Namibia is a non-profit organization that provides training and support in ICT literacy for teachers and communities. CECS currently focuses on basic computer literacy and advanced literacy and pedagogy courses are available, as communities and teachers become literate in the basic skills.

In June 2003, the Namibian Parliament signed a memorandum of understanding (MOU) with Microsoft to jointly implement a Pathfinder project for Africa. Microsoft has spent the last two years testing an ICT Blueprint for Schools in Namibia. Built upon 20 years of experience in the education sector, this Blueprint highlights the critical components that all schools need to consider for a successful ICT implementation strategy. Blueprint for Schools is part of the long-standing commitment to education on the part of Microsoft: a tried and tested methodology for the successful integration of ICT into the curriculum. Microsoft, through their global Partners in Learning Program, continues to be committed to education and providing students with opportunities to learn about ICT.

SchoolNet Namibia is a local, hands-on ICT deployment, training, and support organization. The successful provision of innovative computer technologies and Internet to over 300 schools since 2000 has led SchoolNet to become a lead organization in national ICT policy-making in Namibia. SchoolNet has pioneered the adoption of appropriate and affordable school computer technologies, free and open source software solutions, creative commons licensed educational content, and (unique in Africa) significantly discounted flat-rate 24/7, wireless Internet service in partnership with local telecommunication agencies, and solar-powered school computer laboratories.

2.2 Policy and Legal Framework

The Education Act was promulgated in December 2001. The primary objectives of the act are to:

- Provide for an accessible, equitable, qualitative, and democratic national education service;
- Provide for the establishment of the National Advisory Council on Education; the National Examination, Assessment, and Certification Board; regional education forums and school boards; and the Education Development Fund;
- Establish state and private schools and hostels;
- Establish the Code of Conduct for the teaching profession;
- Establish the Teaching Service Committee; and
- Provide for other incidental matters (MOBESC, 2004).

The policies relevant to the education sector include:

The National Gender Policy. Both the National Development Plan 2 and the Education for All documents indicate that gender equity is not a major issue in primary education in Namibia due to the considerable efforts made since independence to ensure equal access to education for all. However, there are still barriers to girls studying subjects traditionally considered to be male dominated. There are also imbalances in staffing with more women at the primary level and fewer at senior level and in management positions.

This policy outlines the framework by which implementation of constitutional provisions can be encouraged, supported, and sustained. It also sets out the principles for the implementation, coordination, and monitoring of gender sensitive initiatives (MOBESC, 2004).

National Policy Options for Educationally Marginalized Children. This policy clearly defines categories of educationally marginalized children (including those with special learning needs) and the
main reasons for marginalization in education. It sets out an implementation framework and defines the roles of NGOs and development partners in this area (MOBESC, 2004).

**HIV/AIDS Policy.** The high numbers of people living with HIV/AIDS in Namibia has had a major negative impact on education and schooling. The rising number of orphans and children caring for terminally ill parents, coupled with the depletion of family resources is affecting the learners who find it more and more difficult to attend school. Furthermore, figures suggest that around one in seven teachers was HIV positive in 2002 (MOBESC, 2004). This has a profound impact on the quality of teaching as teachers are off work for prolonged periods and more and more time is spent attending funerals. For these reasons, the MOE has set up HAMU to initiate, coordinate, and implement a policy and strategies to combat the spread of HIV and AIDS.

**Policy on Learners with Disability.** The GRN places specific responsibilities on the MOE to ensure that children and adults with disabilities are integrated into mainstream education. The National Policy on Disability states that: “the Government shall ensure that children and youth with disabilities have the same right to education as children without disability” (MOBESC, 2004).

**National Language Policy for Schools.** The language policy in education recommends the use of the mother tongue for instruction from Grades 1–3, with Grade 4 serving as a transitional grade. English is used as the medium of instruction from Grades 5–12 (MOBESC, 2004).

**Namibian ICT Policy for Education.** This policy was originally developed in 1995 by a mixed working group and was revised in 2000. It reflects recent developments in pedagogy, research, technology, and partnerships. The policy’s priority areas are colleges of education and related in-service programs; schools with secondary grades; teacher education programs at tertiary institutions; vocational training; and primary schools, libraries and community centers, adult education centers, and special needs education (ICT Policy Web site).

**National Youth Policy of Namibia.** This policy is coordinated by the Ministry of Youth and Sports in cooperation with other youth-serving ministries and youth organizations. The policy’s aim is to provide an operational framework with a set of realistic guidelines from which action programs and services can be developed to facilitate involvement of young women and men in national development efforts and respond to their various needs. The National Youth Policy for Namibia has the following policy goals: 1) to empower the youth; 2) to encourage up-bringing of the children that results in responsible young women and men; and 3) to enable youth to initiate actions that promote their own development and that of their communities and broader society.

The National Youth Policy seeks the fulfillment of a number of objectives, two of which are relevant to MCA Program initiatives: 1) to expand and improve access to education and training opportunities in all fields for Namibian youth at all levels; and 2) to provide opportunities for youth to develop relevant life and work skills to help them to become responsible and self-reliant members of the community (Youth Policy Web site).

### 2.3 State of Education Sector

#### 2.3.1 Status/Description of Primary and Secondary Schooling

**Introduction.** A legacy of severe historical inequities in access to education, coupled with an inefficient and ineffective education and training system, continues to affect the quality of Namibian graduates at the
primary, secondary, and tertiary levels. This section of the report provides a situational analysis of the present condition of the education system.

As shown in Table 2.2, approximately 95.4% of learners attend state schools. The majority of teachers have some form of teacher training, with 76% having attained at least two years of tertiary education. The average learner-teacher ratio for 2007 was 28:1. Table 2.2 summarizes the national education statistics.

### Table 2.2 Educational statistics in Namibia, 2007

<table>
<thead>
<tr>
<th>Number of schools</th>
<th>Total</th>
<th>State</th>
<th>Private</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary School</td>
<td>1,048</td>
<td>994</td>
<td>54</td>
</tr>
<tr>
<td>Combined School</td>
<td>428</td>
<td>399</td>
<td>29</td>
</tr>
<tr>
<td>Secondary School</td>
<td>176</td>
<td>160</td>
<td>16</td>
</tr>
<tr>
<td>Other</td>
<td>9</td>
<td>9</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of learners</th>
<th>Total</th>
<th>State</th>
<th>Private</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary</td>
<td>409,508</td>
<td>392,117</td>
<td>17,391</td>
</tr>
<tr>
<td>Secondary</td>
<td>158,162</td>
<td>150,378</td>
<td>7,784</td>
</tr>
<tr>
<td>Other</td>
<td>2,953</td>
<td>1,959</td>
<td>994</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>570,623</td>
<td>544,514</td>
<td>26,169</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Teacher Qualifications</th>
<th>Total</th>
<th>Without teacher training</th>
<th>With teacher training</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than Grade 12</td>
<td>1,480</td>
<td>317</td>
<td>1,163</td>
</tr>
<tr>
<td>Grade 12 or 1–2 years tertiary</td>
<td>3,285</td>
<td>469</td>
<td>2,816</td>
</tr>
<tr>
<td>More than 2 years tertiary</td>
<td>15,568</td>
<td>108</td>
<td>15,460</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>20,333</td>
<td>894</td>
<td>19,439</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Learners per teacher</th>
<th>Average learner: teacher ratio 28:1</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Number of teaching rooms</th>
<th>Total Rooms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permanent</td>
<td>16,518</td>
</tr>
<tr>
<td>Prefabricated</td>
<td>1,171</td>
</tr>
<tr>
<td>Traditional</td>
<td>1,420</td>
</tr>
<tr>
<td>Hired</td>
<td>181</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>19,290</strong></td>
</tr>
</tbody>
</table>

Source: MOE, 2007

**Characteristics of the school system.** Namibia’s schooling system is primarily structured into 12 grades, these being divided into four phases: Lower Primary (Grades 1–4), Upper Primary (Grades 5–7), Junior Secondary (Grades 8–10), and Senior Secondary (Grades 11 and 12). Many schools in Namibia do not follow the “normal” phases or divisions between primary (Grades 1–7) and secondary (Grades 8–12) schooling. Schools may offer several other grades that include special classes for children with learning disabilities, special grades with a curriculum adapted for the purposes of special schools, classes for mentally challenged children, and in the case of one private school in Windhoek, Grade 13. There are eight special schools for children with special educational needs, distributed in various regions, but administered centrally from the MOE head office in Windhoek (MOE, 2007). In some localities, “combined” schools (schools that offer primary and secondary grades) exist. These schools are seen as important in providing access to education particularly in locations where a separate secondary school is not feasible due to small numbers of potential learners.

The total number of schools in Namibia has increased from 1,545 in 2001 to 1,661 in 2007, at an average growth rate of 1.2%.
Enrollments. Enrollment patterns (Table 2.3) indicate that there is a good balance between male and female, despite imbalances in some regions. In the 13 regions, the percentage of female enrollment in the lower primary phase ranged between 47.6% and 50.4%. However, the high school phases had less balanced ratios and showed significant differences between the regions. The Caprivi, Kavango, and Kunene regions had low percentages of female learners in the senior secondary phase. Only 39.9% of learners in special schools were females.

Table 2.3  Percentage of female learners in the different school phases in each region

<table>
<thead>
<tr>
<th>Region</th>
<th>Total</th>
<th>Primary subtotal</th>
<th>Lower primary</th>
<th>Upper primary</th>
<th>Subtotal secondary</th>
<th>Secondary junior</th>
<th>Secondary senior</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>National</td>
<td>50.7</td>
<td>49.6</td>
<td>48.9</td>
<td>50.7</td>
<td>53.9</td>
<td>53.9</td>
<td>53.7</td>
<td>42.6</td>
</tr>
</tbody>
</table>
| Educational Regions
| Caprivi      | 48.6  | 48.3             | 48             | 48.8          | 49.3               | 49.6             | 48.4             | 35.3  |
| Erongo       | 51.4  | 50.7             | 50.4           | 51.1          | 53.1               | 53.1             | 53.2             | 48.9  |
| Hardap       | 51.1  | 49.7             | 49.6           | 49.9          | 54.8               | 54.3             | 56.6             | 41.8  |
| Head Office  | 39.9  | 42.6             | 42.3           | 42.9          | 40.7               | 40.7             | —                | 38.7  |
| Karas        | 50.8  | 49.8             | 49.6           | 50.1          | 54                 | 54               | 54               | 44.6  |
| Kavango      | 48.7  | 49.8             | 49.4           | 50.6          | 44.5               | 45.8             | 38.9             | 42.1  |
| Khomas       | 51.7  | 50.7             | 50.1           | 51.5          | 54                 | 54.3             | 53               | 41.2  |
| Kunene       | 49.8  | 49.9             | 49.7           | 50.1          | 49.6               | 50.6             | 45.4             | 41.6  |
| Oshangwena   | 52.0  | 50.6             | 48.8           | 53            | 56.2               | 56.5             | 53.4             | 33.3  |
| Omaheke      | 50    | 49.7             | 49.2           | 50.5          | 50.9               | 50.6             | 52.7             | 45.7  |
| Omusati      | 51    | 49               | 47.6           | 50.8          | 56.1               | 55.9             | 56.8             | 53.4  |
| Oshana       | 51.2  | 49.1             | 49             | 49.4          | 55.3               | 55.3             | 55               | 51.5  |
| Oshikoto     | 50.7  | 48.9             | 47.9           | 50.4          | 55.5               | 55.7             | 54.8             | 42.1  |
| Otjozondjupa | 50.6  | 50.2             | 49.7           | 51            | 51.9               | 51.9             | 52.3             | 41.2  |

Note: Shaded regions will be the beneficiaries of new/renovated schools.
Source: MOE, 2007

Table 2.4 shows that most learners are found in the primary phase, and the number tapers as fewer continue to senior secondary school. This phenomenon was found in all regions, illustrating a high drop-out rate in the secondary school phase. MOE identified five major factors that account for two-thirds of the total drop out rate:

- Parents demanding that learners stay at home;
- Pregnancy;
- Distance between schools and home;
- Discipline; and
- Learners feeling too old for their grade.

Table 2.4  Enrollment in different school phases in each region

<table>
<thead>
<tr>
<th>Region</th>
<th>Total</th>
<th>Primary Subtotal</th>
<th>Lower Primary</th>
<th>Upper Primary</th>
<th>Subtotal Secondary</th>
<th>Secondary Junior</th>
<th>Secondary Senior</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>National</td>
<td>570,623</td>
<td>409,508</td>
<td>241,616</td>
<td>167,892</td>
<td>158,162</td>
<td>124,448</td>
<td>33,714</td>
<td>2,953</td>
</tr>
</tbody>
</table>
| Educational Regions
| Caprivi      | 26,277 | 18,562           | 11,472        | 7,090         | 7,706              | 5,655            | 2,051            | 9     |
| Erongo       | 26,131 | 17,662           | 10,392        | 7,270         | 8,313              | 6,388            | 1,925            | 156   |
| Hardap       | 19,973 | 14,345           | 8,596         | 5,749         | 5,534              | 4,403            | 1,131            | 94    |
| Head Office  | 1,534  | 342              | 200           | 142           | 245                | 245              | —                | 937   |
Subject pass rates. Three examinations are written during the secondary school phase. These include the Junior Secondary School Certificate, the International General Certificate in Education, and the Higher General Certificate in Education. On a national scale, learners generally performed poorly in the science subjects: math, physical science, biology, and geography. This has implications for future development in the science and technology fields, and substantial investment is required to ameliorate the situation.

Teachers. The national number of teachers has increased by an average annual growth rate of 1.9% since 2001, as indicated in Table 2.5. In 2001, there were an estimated 19,117 teachers, but this number rose steadily to 20,333 in 2007. However, across the regions there have been varying patterns of change in the number of teachers, with regions such as Oshikoto registering a substantial increase with an annual growth rate of 3.9% teachers, while regions such as Omaheke, Hardap, and Caprivi registered a decline in the number of teachers.

Table 2.5 Number of teachers from 2001 to 2007

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>National</td>
<td>18,117</td>
<td>18,782</td>
<td>18,771</td>
<td>18,834</td>
<td>19,304</td>
<td>19,480</td>
<td>20,333</td>
<td>1.9 %</td>
<td>4.4</td>
</tr>
<tr>
<td>Caprivi</td>
<td>1,062</td>
<td>1,031</td>
<td>996</td>
<td>980</td>
<td>978</td>
<td>975</td>
<td>995</td>
<td>-1.1 %</td>
<td>2.1</td>
</tr>
<tr>
<td>Erongo</td>
<td>828</td>
<td>835</td>
<td>836</td>
<td>856</td>
<td>869</td>
<td>886</td>
<td>937</td>
<td>2.1 %</td>
<td>5.8</td>
</tr>
<tr>
<td>Hardap</td>
<td>792</td>
<td>779</td>
<td>717</td>
<td>706</td>
<td>713</td>
<td>691</td>
<td>707</td>
<td>-1.9 %</td>
<td>2.3</td>
</tr>
<tr>
<td>Head Office</td>
<td>148</td>
<td>154</td>
<td>155</td>
<td>170</td>
<td>174</td>
<td>174</td>
<td>176</td>
<td>2.9 %</td>
<td>1.1</td>
</tr>
<tr>
<td>Karas</td>
<td>613</td>
<td>629</td>
<td>599</td>
<td>614</td>
<td>648</td>
<td>653</td>
<td>699</td>
<td>2.2 %</td>
<td>7</td>
</tr>
<tr>
<td>Kavango</td>
<td>2,179</td>
<td>2,272</td>
<td>2,256</td>
<td>2,224</td>
<td>2,299</td>
<td>2,336</td>
<td>2,409</td>
<td>1.7 %</td>
<td>3.1</td>
</tr>
<tr>
<td>Khomas</td>
<td>1,997</td>
<td>2,009</td>
<td>2,020</td>
<td>1,967</td>
<td>2,095</td>
<td>2,131</td>
<td>2,279</td>
<td>2.2 %</td>
<td>6.9</td>
</tr>
<tr>
<td>Kunene</td>
<td>557</td>
<td>572</td>
<td>561</td>
<td>571</td>
<td>586</td>
<td>600</td>
<td>620</td>
<td>1.8 %</td>
<td>3.3</td>
</tr>
<tr>
<td>Ohangwena</td>
<td>2,204</td>
<td>2,421</td>
<td>2,528</td>
<td>2,654</td>
<td>2,736</td>
<td>2,813</td>
<td>2,951</td>
<td>5 %</td>
<td>4.9</td>
</tr>
<tr>
<td>Omaheke</td>
<td>556</td>
<td>547</td>
<td>535</td>
<td>514</td>
<td>522</td>
<td>516</td>
<td>535</td>
<td>-0.6 %</td>
<td>3.7</td>
</tr>
<tr>
<td>Omusati</td>
<td>2,897</td>
<td>2,977</td>
<td>2,979</td>
<td>3,003</td>
<td>3,032</td>
<td>3,044</td>
<td>3,119</td>
<td>1.2 %</td>
<td>3.8</td>
</tr>
<tr>
<td>Oshana</td>
<td>1,702</td>
<td>1,742</td>
<td>1,728</td>
<td>1,726</td>
<td>1,739</td>
<td>1,772</td>
<td>1,819</td>
<td>1.1 %</td>
<td>2.7</td>
</tr>
<tr>
<td>Oshikoto</td>
<td>1,581</td>
<td>1,720</td>
<td>1,796</td>
<td>1,845</td>
<td>1,894</td>
<td>1,926</td>
<td>1,994</td>
<td>3.9 %</td>
<td>3.5</td>
</tr>
<tr>
<td>Otjozondjupa</td>
<td>1,001</td>
<td>1,094</td>
<td>1,065</td>
<td>1,004</td>
<td>1,019</td>
<td>1,003</td>
<td>1,093</td>
<td>1.5 %</td>
<td>9</td>
</tr>
</tbody>
</table>

Note: Shaded regions will be the beneficiaries of new/renovated schools; Source MOE, 2007
According to MOE statistics (2007), there are large disparities in the numbers of teachers provided, particularly in the primary school phase, between regions; lesser differences were observed in the secondary phase. Omusati, Ohangwena, and Kavango regions registered a large number of teachers, while Omaheke had the least number of teachers.

At the time of independence, great disparities also existed in Namibia between regions in learner-teacher ratios. This discrepancy has narrowed slowly over the years, as is evidenced by a decrease in the national ratio, from 29:1 in 2001 to 28:1 in 2007. The national expectation for the learner-teacher ratios is 40 and 35 learners per teacher for primary and secondary phases, respectively (MOE, 2007). Ratios in regions such as Oshana, Otjozondjupa, and Ohangewena are still below the national expectation.

Physical facilities. There are considerable differences in school infrastructure (classrooms, laboratories, workshops, and special teaching rooms) between regions. Significant shortages exist in the number of classrooms available for students enrolled across regions. Semi-permanent structures made of prefabricated material, traditional pole and dagga huts, metal sheets, and tents were erected in places to ease this shortage. A total of 1,171 prefabricated and 1,420 traditional buildings were found nationally in 2007, with a large share of these being found in Omusati, Ohangwena, Oshikoto, and Kavango regions. Outdoor teaching areas (often found under trees) were reported to be used regularly for teaching due to the lack of classrooms in some regions, particularly in Kavango.

In addition to shortages of classrooms, housing provision for teachers also varies from region to region. Less than 30% of schools in Kavango, Ohangwena, Oshikoto, Omusati, and Oshana regions have teacher housing, as compared to 60% in Kunene, Otjozondjupa, Omaheke, Hardap, and Karas. Although there has been an improvement in sanitary services available in schools countrywide, Kavango remains the most poorly serviced region with only 53.8% of its schools having access toilets; it is the only region in the country that falls below 75% in this category (MOE, 2007).

The majority of schools in the northern regions have no electricity supply: Kavango, Omusati, and Ohangwena schools are still below 50%. Having no electricity limits the subjects that can be offered, principally the sciences and ICT, as well as the equipment that schools can use. Only 51% of schools countrywide have access to telephones. Disparities in telephone services were also apparent between regions, with the three aforementioned regions still highly under-serviced. The lack of telephone services in most regions severely limits communications with support staff in regional offices, parents, and service providers.

2.3.2 Status/Description of Tertiary Education in Namibia

The Directorate of Higher Education within the Department of Tertiary Education, Science, and Technology is responsible for post-secondary and tertiary education and training. The directorate has committed to contributing to the national goals by ensuring the efficient production and supply of skilled human resources. The directorate manages and administers the teacher education and training colleges and coordinates with institutions of higher learning, particularly the University of Namibia (UNAM), and the Polytechnic of Namibia, on policy directives and financial assistance. UNAM and the Polytechnic are, however, full-fledged autonomous institutions. These and other institutions are described below.

UNAM, established in 1992, delivers education designed to meet national human resources requirements through quality teaching, research, consultancy, and community services. (UNAM Web site). UNAM offers a wide range of topics to students to pursue as majors and minors, with subjects typical of universities in developed countries.
The Polytechnic of Namibia provides tertiary technological career-oriented education at internationally recognized standards. The main objective of these curricula is thus the practice, promotion, and transfer of technology (Polytechnic Web site).

The Namibian College of Open Learning (NAMCOL), a parastatal educational institution created in 1997, provides continuing education learning opportunities for adults and out-of-school youth. NAMCOL has since grown to become the largest educational institution in Namibia in terms of total number of students.

The directorate is also responsible for Colleges of Education, located in Caprivi, Rundu, Ongwediva, and Windhock, and the Vocational Training Colleges at Caprivi, Rundu, and Windhoek.

Established in 1997, the Institute of Information Technology (IIT) is a privately owned training and education provider with three full campuses and five satellite centers countrywide. It delivers internationally accredited industry qualifications to around 4,500 Namibians annually in disciplines ranging from basic computer literacy to hardware and software engineering, as well as a range of business and management courses accredited by the University of Cambridge. Through its other divisions, IIT provides Namibians with stable refurbished computers running on a mixture of open source and Microsoft platforms. IIT is a founding member and board member, *inter alia*, of the ICT Alliance, SchoolNet, ICT4, Education, and the Namibian Chamber of Commerce and Industry.

2.3.3 Status/Description of Vocational Training in Namibia

The Directorate of Vocational Education and Training (VET) in the MOE is responsible for VTCs and the COSDECs (MOE Web site).

Enrollment in Vocational Education and Training. The number of vocational trainees enrolled in technical trades and commercial courses at various levels and institutions within the government-run centers and private companies has been rapidly increasing. The system is currently offering a three-year program, which leads to the award of National Vocational Certificate Level (iii).

<table>
<thead>
<tr>
<th>VTCs</th>
<th>Region</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zambezi VTC Levels 1-3</td>
<td>Caprivi</td>
<td>196</td>
<td>220</td>
<td>316</td>
</tr>
<tr>
<td>Rundu VTC Levels 1-3</td>
<td>Kavango</td>
<td>243</td>
<td>99</td>
<td>342</td>
</tr>
<tr>
<td>Valombola VTC Levels 1-3</td>
<td>Oshana</td>
<td>171</td>
<td>170</td>
<td>341</td>
</tr>
<tr>
<td>Okakarara VTC Levels 1-3</td>
<td>Otjozondjupa</td>
<td>193</td>
<td>15</td>
<td>208</td>
</tr>
<tr>
<td>Windhoek VTC Levels 1-3</td>
<td>Khomas</td>
<td>340</td>
<td>55</td>
<td>395</td>
</tr>
<tr>
<td>NIMT Levels 1-3</td>
<td>Erongo</td>
<td>145</td>
<td>15</td>
<td>160</td>
</tr>
<tr>
<td>Ehafo Levels 1</td>
<td>Khomas</td>
<td>34</td>
<td>18</td>
<td>52</td>
</tr>
<tr>
<td>DAPP Levels 1</td>
<td>Omusati</td>
<td>5</td>
<td>40</td>
<td>45</td>
</tr>
<tr>
<td>Helmut Bleks Foundation Level 1</td>
<td>Khomas</td>
<td>2</td>
<td>45</td>
<td>47</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>1391</td>
<td>677</td>
<td>2068</td>
</tr>
</tbody>
</table>

Source: MOE Web site

Compared to the enrollment of 2004, the 2005 statistics reveal that there is an increase in the number of both female and male trainees in the commercial trades, an indication that government policy on encouraging gender balance is being taken into account.

Curriculum Development Program. Sixty-six curriculum modules, 66 unit standards, and 22 training manuals for levels 1 to 3 were completed based on the Competency Based Education and Training curriculum (CBET). CBET was developed to offer awards to apprenticeship training and institutional...
trainees as well as to private candidates. The NTA facilitated curriculum, unit standards, and training manuals for both instructors and trainees for different trades: automotive mechanics, bricklaying and plastering, boiler-making, hospitality, tour guiding, structural carpentry, cabinet making, welding and fabrication, plumbing and pipe-fitting, secretarial, and administration.

Program for the Visually Impaired. Four blind trainees were admitted at Valombola VTC in a three-year course on Office Administration and Business Management. N$500 000 was allocated for purchasing equipment and implementation of the pilot program.

COSDECs. VET oversees the training activities of COSDECs. Some of the skills areas in the courses offered by COSDECs are: bricklaying and plastering, food preparation, needlework, welding and fabrication, woodwork, building maintenance, jam making, meat processing, entrepreneurship, leather tanning and production, basic computer literacy, and papermaking.

Achievements

- The VET Policy has been approved and is ready for implementation.
- The Project Management Unit for the establishment of the Namibia Training Authority has been successful in developing CBET materials in cooperation with industry and training establishments.
- The NTA has purchased former Rössing Foundation Building facilities in Khomasdal for its operations.
- The Polytechnic Senate has established instructor training programs, and the Polytechnic of Namibia has implemented its own training program.

2.3.4 Status/Description of Resource Centers and Libraries

The main purpose of the Namibia Library and Archives Service (NLAS) Directorate is to ensure that adequate, appropriate, and relevant information services and resources are available at all levels of Namibian society. The vast majority of library users are learners, ranging from pre-primary to post-graduate level, but the services offered are not limited to these groups alone. The NLAS Directorate consists of the following five subdivisions:

1. The Community Library Service (CLS) provides the general public and learners country-wide with information and learning resources through the community library network. At present, there are 52 community libraries in the country.

2. The Education Library Service (ELS) is responsible for providing curriculum-related resource materials and books to stimulate reading culture to all learners and teachers at primary and secondary schools in Namibia. In addition the ELS promotes Basic Information Science (BIS) by developing a learner-centered, resource-based syllabus in conjunction with the Namibian Institute of Educational Development (NIED).

3. The Ministerial Library Service (MLS) supports and coordinates specialized library and information services in government ministries. At present the MLS comprises 12 libraries in government ministries and agencies.

4. The National Library of Namibia supports education and research through access to national and international information resources, and collects and preserves the nation’s published intellectual heritage through legal deposit and book purchases.
5. The National Archives of Namibia maintains the institutional memory of government ministries, offices and agencies; collects and preserves the nation’s history and unpublished documentary heritage; and supports education and research by providing access to these resources (MOE Web site).

The following discussion focuses on the CLS and ELS:

**Provision of Services.** The CLS is striving to broaden its service to previously neglected communities. In 2007, two new community libraries were opened in Tsumkwe and at Greenwell Matongo in Katutura (see Figure 2.2). A total of 4,292 books were purchased (versus 11,959 in the previous year), while 2,457 books were received as donations mainly from Book Aid International. 24,565 books were distributed to community libraries, the majority of them from processing previous years’ acquisitions (MOE Web site).

![Figure 2.2 The newly opened Greenwell Matongo Community Library in Katutura](image)

**Utilization of Libraries.** The number of registered library memberships in 2007 was 17,947 versus 19,602 in 2006. 298,563 books were borrowed versus 388,356 in the previous year. However, the book circulation figure only represents the books being borrowed by members, and does not include the number of books used within the libraries. In underprivileged areas, learners without space at home come to the library to study instead of taking books out. The falling numbers in membership (only required for borrowing) and circulation indicate a shift in usage patterns rather than a decline in the use of libraries. (MOE Web site)

**Upgrading Service Quality.** The staffing situation slightly improved in 2007 when several ELS posts that had been vacant for years in the various sub-divisions were filled. The ELS managed to fill all three Education Officers’ posts and three regional librarian’s posts were filled. The recruitment of professional staff has clearly improved library usage and service levels. Newly recruited professional librarians in the specialized (ministerial) libraries have, among other things, initiated subscriptions and promoted the use of electronic journals and other Web-based resources.
2.3.5 Key Gaps/Shortcomings in the Education Sector

The regional directorates have each identified a number of challenges in the education sector relating to school facilities, staff, administration, and the funding thereof. The issues that appear to be common problems across the country are listed below:

**Lack of Facilities and Equipment**
- Shortage of exam halls
- Problems with text book availability
- Overcrowding in classrooms
- Inadequate classroom facilities
- Lack of classroom furniture and equipment
- Shortage of computers and Internet access
- Lack of adequate teacher housing
- Lack of potable water and power supply
- Lack of security

**Teaching Staff Issues**
- Lack of teachers in math and physical science
- Chronic illness among staff
- Frequent attendance at funerals
- Long delays in finding teacher replacements or approving contracts for expatriate teachers
- Insufficient teacher training

**Administrative Problems**
- Lack of reliable transport and funding to carry out administrative duties
- Shortage of administration staff (especially in Hardap)
- Demands from Head Office causing work overload
- Decentralization process not yet been properly completed
- Delays in funding from MOE, resulting in problems in completing school building, renovation, and maintenance contracts
- Poor and uncoordinated communications with HAMU that have affected the implementation of the HIV/AIDS programs

**Other Issues**
- Lack of facilities for children with disabilities (deaf, blind, etc.)
- Lack of adequate parental involvement in school boards
- High drop-out rate in primary school due to lack of money
- School budget shortfalls due to high number of orphans and vulnerable children with no ability to pay school fees

The MCA Compact will address many of these issues.
The Directorate of Vocational Education and Training has identified the following problems and constraints:

- The development of the envisaged CBET curricula is progressing at a slow pace despite availability of funds for production of relevant materials by the implementation team. Proper supervision is needed in order to implement CBET programs at the VTCs.
- The current budget allocation remains too limited to fund priority projects.
- The Directorate experienced technical problems in implementing the second phases of two ongoing projects: upgrading the National Trade Testing Center (NTTC), and upgrading the Eenhana VTC.
- The Ministry of Works, Transport, and Communication (MWTC) has a history of irregularly processing tender documents. This has resulted in either implementation delays or non-execution of projects. There needs to be improved coordination between the National Planning Commission (NPC) and the MWTC in the implementation of capital projects.
- The National Training Authority and Supervision, Certification, and Quality Control agencies have not yet been established despite a Cabinet decision on this matter.
- Regulations for the implementation of the training levy in accordance with the National Vocational Training Act, 1994 (Act No. 18 of 1994) have not yet been developed.
- The VET structure needs to be implemented to enable NTTC to recruit professional staff to administer a testing and certification program.

The Namibia Library and Archives Service, in its 2007 report, identified the following staffing and facility problems and constraints facing communities and learners:

- The shortage of professional staff remains critical. Of the 37 professional posts under the Directorate at national library level, only 24 were filled as of March 2006. Regionally, this situation is much worse. Three subdivisions have continued to function without the most senior position being filled, seriously affecting not only day-to-day work, but also long-term planning.
- The CLS did not undertake the annual workshop for rural library assistants for the second year in a row because of budgetary constraints.
- The slow Internet connectivity in the National Archives and National Library remains an obstacle. While the National Archives has acquired digitization equipment, other services need to expand in this direction in order to provide Internet content for learners countrywide, and to speed up inter-lending services through electronic document delivery.
- No provision has been made for competing demands of teaching and school library services. Where the BIS teacher is responsible for the library, the BIS periods are used for library management, which diverts time from teaching the subject.

The MCA Program will help to address some of these issues, particularly through technical assistance and training for RSRC staff.

### 2.3.6 GRN and Donor Coordination

In 2005, the GRN adopted the 15-year ETSIP, which serves as the primary mechanism for coordinating donor assistance to the education sector. Through ETSIP, the GRN encourages donors to participate in a sector-wide approach program of budget support, from which the proposed MCA Compact activities are drawn. GRN’s pledged contribution to this plan includes US$162 million from 2005–2020, or approximately US$10 million annually.
MCA’s Education Project will focus on existing gaps within ETSIP in order to complement the implementation of the overall sector program. MCC and MCA have coordinated closely with the lead donors in this effort, namely the World Bank and European Union. Furthermore, MCC will have a formal place at ETSIP coordination meetings and forums as a lead development partner once the MOU is signed.

With respect to other ETSIP development partners (who fund major projects rather than provide general budget support), MCC has discussed project activities with USAID, the President’s Emergency Plan for AIDS Relief (US), Finland, Sweden, Norway, KfW of Germany, and Luxembourg. For the NTF, MCC has cooperated with Lux Development; MCA assistance will focus on the NTF while Lux Development will focus on development assistance to other parts of the NTA. It was also informally agreed that both institutions will maintain bilateral communications with a view to avoiding overlap.

An analysis of the various donor-funded education programs in Namibia shows that there are few if any overlaps with the MCC/MCA Program; most of the existing donor-funded programs focus on ICT support and teacher training. However, almost all of the donors (GTZ, USAID, the Swedish International Development Agency, WorldTeach, and the Peace Corps) are providing support for HIV/AIDS awareness, prevention, care, and treatment. These initiatives will require careful coordination to ensure that the various programs, including the MCA support to HAMU, are aligned.
3.0 Stakeholder Issues and Concerns

The social and gender surveys undertaken for this Strategic Environmental Assessment (SEA) provided some insights into the role of education in the rural villages of the NCAs. These surveys were limited to the northern regions and did not cover the parts of the country where the Education Project will be rolled out.

The importance of schooling to the villagers of the NCAs is clear from the fact that almost all respondents cited school fees as one of the main reasons that they sold livestock, veld products and their derivatives (oils, alcohol), and indigenous natural products (INPs). This implies that the importance of education is recognized, even if it requires sacrifice from parents. The importance of schooling is also demonstrated when communities and/or extended families provide the fees for orphans to continue with their schooling, even when they are long past normal school age.

It was also interesting to note that income from conservancies was used to promote education. For example, the Kandjara Conservancy used money generated from the conservancy to pay contributions for all village children to the school development fund. The Uukwaluudhi Conservancy used some of its income to pay for bursaries for up to four students to complete high school and/or courses at a tertiary institution in Windhoek.

A high degree of despondency is also in evidence, because many people feel that the lack of employment corresponds to the lack of high schools in most communities (Diamond and Mwashita, 2008). High school fees are expensive, primarily because there is seldom a secondary school in the village or surrounding area. In these situations, children need to travel to bigger centers where they attend boarding school (the numbers of which have dwindled in recent years) or stay with private persons. Not only are the school fees much more than those of primary and junior secondary school, but the accompanying boarding and travel costs make it nearly impossible for the average villager to pay for their children to continue schooling (see Volume 2, Section 4).

The gender survey revealed that local women perceive several opportunities that may result from the Education Project, including:

1. **School construction jobs:** providing equitable job access for local women and men, including apprenticing opportunities for women in the trades, and HIV/AIDS education for construction employees;

2. **Services related to construction employees:** specifically, local services for food provision; and

3. **Textbooks:** setting criteria so that materials with sex-based stereotypes are excluded (Diamond and Mwashita, 2008).
4.0 Impact Assessment

4.1 Project Description

4.1.1 Schools

Schools targeted for MCA Namibia Compact funding were selected through ETSIP’s “needs pyramid,” which incorporates criteria such as number of temporary classrooms in use and number of school-aged children in the area who are not enrolled in school. Of the 47 schools to be funded by the Compact, 35 are seeking to relieve overcrowding, and 12 are planning to expand to introduce senior secondary education.

At an average cost of approximately $1.5 million per school, the upgrades at the targeted 47 primary and secondary schools will include:

- Constructing of additional classroom blocks;
- Addition of teacher hostels (at selected rural schools);
- Repair of dilapidated walls, flooring, and roofing;
- Addition of facilities including libraries, administrative blocks, and science laboratories; and
- Provision of water supply, sanitation and electricity.

For each of the 47 schools, the size of school grounds is deemed sufficient for construction of additional buildings. Specific care will need to be taken to locate the new structures on high-lying ground, in order to prevent flooding during the rainy season.

Where the school does not have potable water, provision has been made for connection to the regional reticulation system, or for a borehole. Provision is also made for elevated tanks, both to ensure availability of water in the event of interrupted supply and to provide sufficient pressure. Further, the Compact recommends that rural schools be provided with pit latrines rather than flush toilets, even if water is available, in consideration of the school’s ability or financial capacity to pay for water services.

An electricity connection will be made to the national power grid. Where this is not possible (due to distance), solar power will be used (for four schools) or a generator will be replaced (for one school).

In forthcoming surveys, site-specific conditions (particularly soil conditions) will need to be assessed, in order to confirm the soundness of proposed designs.

4.1.2 Community Skills Development Centers

In line with ETSIP goals of mobilizing additional and diverse funding sources toward the vocational education sub-sector, MCA will invest in expanding and upgrading the current network of COSDEC facilities. In support of this emerging vocational training system, MCA will fund:

- Construction of four new COSDECs located in southern Namibia (Gobabis, Lüderitz, Walvis Bay, Windhoek);
- Upgrades of five existing COSDECs in northern Namibia (Tsumeb, Ondangwa, Opuwo, Otiwarongo, and Rundu); and
- Two COSDEC mobile units that are intended to provide equipment and an instructor in areas that cannot justify a full COSDEC, but where demand exists for specific sets of skills.
In addition, a new SME Support Unit will be added to four of the renovated COSDECs. These units will enable specialized training in value-added production, mentoring on development and marketing of products, and advice in securing start-up capital.

The basic design of the COSDECs includes a classroom, a workshop (in which heavy and noisy equipment may be used), and outdoor covered areas for production activities (such as bricklaying). Each facility also requires store rooms or storage areas and adequate office space, with the SME Support Units comprising an office and six units.

The four COSDECs to be renovated at Ondangwa, Tsumeb, Otjiwarongo, and Rundu are located in municipal areas with full services of water, electricity, sewerage, and solid waste removal, and all sites and buildings belong to the Community Skills Development Foundation (COSDEF). No information was available at the time of writing regarding the Opuwo COSDEC.

MCC due diligence assessments conducted prior to this SEA considered the proposed sites for two new COSDECs in Walvis Bay and Lüderitz appropriate. Both sites will be fully serviced. In Gobabis, three potential sites were assessed by the due diligence team, with the preferred site located off the main road. The site will be fully serviced in the near future, and the COSDEF will need to purchase the land from the municipality.

### 4.1.4 Regional Study and Resource Centers

Greenfield sites are proposed for all three RSRCs. The site proposed for Oshakati is low-lying, a couple of meters below road level, and prone to flooding. For other building construction in the area, sites have been filled to road level in advance of construction, and the same would be necessary for the RSRC site. The municipality has already arranged for this and the other low-lying plots in the area to be filled, and services to the site will be available.

For Helao Nafidi, the position and extent of the land for the site has not yet been included in any planning document. A land surveyor will be appointed in the near future to record the exact position and boundaries of the site. Further, the current landowner has agreed in principle with the Town Council to vacate the land for the purposes of the RSRC, and terms of compensation will be agreed prior to entry-into-force.

The site proposed for Gobabis is located in a recently surveyed extension to the Epako suburb, and is regarded as suitable. However, this site is also not yet available to the municipality, with purchase and transfer planned to occur prior to entry-into-force.

### 4.1.5 Strengthening the HAMU

The contractor working with HAMU will develop and implement HIV/AIDS awareness and prevention plans for civil works activities at the 47 schools, COSDECs, and RSRCs described above. The plans will be targeted at construction workers, school populations, and communities where the construction activities will occur.

### 4.2 Need for Impact Assessment

The Education Project is considered a Category B project under the MCC Environmental Guidelines due to the site-specific and readily mitigated impacts that will result from the project activities (US Government, 2005).
The types of projects requiring an environmental impact assessment (EIA) in Namibian legislation are listed in Schedule 1 of the Environmental Management Act, 2007. An EIA for the types of construction project being contemplated would only be triggered if there is the need for a change in zoning or if there are any flood control works, e.g., at the Oshakati RSRC.

It is more likely that the Department of Environmental Affairs, as part of its conditions of approval, will require site-specific environmental management plans (EMPs) to be developed for each facility and incorporated into the construction contracts. Separate EMPs will be developed for the construction of pipelines and electricity lines necessary for the utility connections of respective educational facilities. (MCC Consultation Memo, 2008).

For the Education Project, this Thematic Analysis Report focuses on two aspects of the program:

- Direct impacts from construction activities relating to the new and/or renovated schools, COSDECs, and RSRCs as described in Section 4.1; and
- Direct and indirect impacts resulting from the implementation and operation of the overall Education Project, i.e., the benefits of improved infrastructure, textbook availability, administration, management, and funding (as described in Section 1.2).

4.3 Impact Assessment Methodology

The impact assessment process for the Education Project used the following scoring system in the matrices shown in Volume 2, Section 11.

Table 4.1 Key to assessment scoring

<table>
<thead>
<tr>
<th>Environmental assessment criteria</th>
<th>±1</th>
<th>±2</th>
<th>±3</th>
<th>±4</th>
<th>±5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnitude of effect on biophysical and socio-economic environment</td>
<td>Low</td>
<td>Medium</td>
<td>High</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spatial extent</td>
<td>Local (site only)</td>
<td>Limited (within 50km radius)</td>
<td>Regional</td>
<td>National</td>
<td>Global</td>
</tr>
<tr>
<td>Duration</td>
<td>&lt;1 year</td>
<td>1-5 years</td>
<td>6-15 years</td>
<td>Permanent</td>
<td></td>
</tr>
<tr>
<td>Probability of occurrence</td>
<td>Unlikely</td>
<td>Possible</td>
<td>Probable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Significance before mitigation</td>
<td>Low</td>
<td>Medium</td>
<td>High</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ease of mitigation of negative impacts</td>
<td>Low cost and/or easy</td>
<td>Medium cost and/or difficulty</td>
<td>High cost and/or difficulty</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ease of enhancement of benefits</td>
<td>May be difficult to implement</td>
<td>Need to find funding and/or technically easy</td>
<td>Funding and know-how available</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Impact rating categories</th>
<th>Positive impacts</th>
<th>Negative impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>&lt;5</td>
<td>&lt;-5</td>
</tr>
<tr>
<td>Low to Medium</td>
<td>6 to 8</td>
<td>-6 to -8</td>
</tr>
<tr>
<td>Medium</td>
<td>9 to 11</td>
<td>-9 to -11</td>
</tr>
<tr>
<td>Medium to High</td>
<td>12 to 14</td>
<td>-12 to -14</td>
</tr>
<tr>
<td>High</td>
<td>15 to 17</td>
<td>-15 to -17</td>
</tr>
<tr>
<td>Very High</td>
<td>&gt;18</td>
<td>&gt;-18</td>
</tr>
</tbody>
</table>
4.4 Discussion of Impacts

4.4.1 Construction and Renovation of Schools, Teacher Houses, COSDECs, and RSRCs

Local livelihoods. Construction activities will have a mixed effect on local livelihoods: use of water for construction and potential loss of land currently being used for grazing, for example, could have a low-medium to medium negative effect on livelihoods. Mitigation may require the drilling of additional boreholes to supply water for construction, and compensation may be needed for current users of the land. There will be no resettlement impacts, since all the sites are within existing school grounds, on vacant municipal land, or an agreement in principle is already in place to purchase land from the land owner on a willing buyer-willing seller basis (e.g., of the RSRCs).

However, construction has the potential to create economic opportunities for local small, medium, and micro enterprises (SMMEs) in the form of subcontracts for construction work, selling goods and services, providing food and catering for construction camps, etc. While this will be a highly positive impact, its full effect may not be realized because of the limited number of skills in the rural areas (Volume 2, Section 11).

Community health. Construction activities always have the potential for low to medium negative effect on community health due to localized and temporary (but high) levels of dust, noise, litter, and pollution. Most of these can be readily mitigated through basic good practices, such as regular dust suppression, prevention of litter, proper waste disposal practices, noise abatement measures, water conservation, pollution prevention, and worker awareness programs. This will require vigilant monitoring and enforcement; however, the greatest impact may be the increased threat of exposure to disease (e.g., tuberculosis, sexually transmitted diseases, HIV/AIDS) due to the influx of construction workers. This high negative potential impact could be long-lasting and have national implications (Volume 2, Section 11, Table 1).

On the other hand, one of the main activities within the overall MCA Education Project is the need for the construction contractor to work through HAMU to implement HIV/AIDS awareness training programs to the workforce, school children, and local communities where they are working. This activity will be funded by MCA and could therefore be considered a mitigation measure that is already incorporated into project design. This program will have a medium to high positive impact on community health in the short term due to awareness raising. Its long-term benefits will, however, need continual reinforcement for this to be a highly significant benefit.

Vulnerability of local people. Construction activities will increase the vulnerability of poor people to events beyond their control. Locally, the backfilling of the RSRC at Oshakati could increase the threat of flooding elsewhere unless the backfill, flood control measures, and stormwater control facilities are properly designed.

Construction sites can, if not carefully managed and rehabilitated, result in large denuded areas that over time become susceptible to wind and water erosion, as well invasions of alien species, causing land degradation. This impact can be reduced from a medium negative impact to a low to medium impact through the implementation and enforcement of the EMP (Volume 2, Section 11, Table 11.1).

The influx of job seekers can become a major problem in small towns if not carefully and strictly managed. In some cases (e.g., in Rosh Pinah) the group of temporary shacks built by aspiring job seekers have become a permanent settlement, plagued by lack of municipal services. This can upset the social structure of a small town or village and can lead to tensions between locals and migrants. Management
requires a proactive approach to hiring of labor, i.e., at source, rather than “at the gate,” and adherence to a policy of hiring no casual labor.

**Biophysical environment.** The small-scale nature of all these construction projects means that the individual impact of each on ecological functioning and processes at habitat and species level will be low. Even though there will be a total of 59 construction projects being undertaken in the country, they are so spread out that there will be no negative and no cumulative impacts on ecosystems to any significant degree (Volume 2, Section 11, Table 11.1).

Slightly more significant local and short-term impacts may occur on surface water habitats as a result of pollution from construction sites, on groundwater resources due to over-pumping, and on heritage resources if these are not properly identified prior to construction. The potential for erosion will also increase if the sites are not rehabilitated. Again, all of these impacts can be reduced through the implementation of the EMP.

**Institutional aspects.** The construction of schools could have a low to medium negative impact on learners due to noise, dust, and general disturbance during construction. Contractors will have to coordinate closely with school principals to avoid noisy work during exam time, lessons, assemblies, etc. These impacts will, however, be short-term (Volume 2, Section 11).

The construction and/or renovation of the COSDECs may provide opportunities for trainees to practice some of their skills, e.g., plumbing, electrical work, bricklaying, and painting.

### 4.4.2 Education Project Implementation and Operation of Schools, COSDECs, and RSRCs

**Livelihoods of local people.** With the possible exception of access to water supply, the Education Project will have a high to very high positive effect on livelihoods (Volume 2, Section 11, Table 11.2). The construction of RSRCs will improve accessibility to community services and information, while the provision of skills training should increase the potential for employment and thus result in increased spending on local goods and services.

Improved schools, availability of textbooks, and teacher training will result in better educated children with brighter job prospects. The COSDECs will provide lifetime skills for young Namibians to enter into the workforce at higher salary levels. Artisanal skills are in high demand throughout the Southern African Development Community region, and thus work prospects are bright.

The only possible negative project impact could be on water supplies, especially boreholes (Volume 2, Section 11). Improved sanitation and water supply in the new institutions, as well as greater demand for such services (as people become better educated and have greater disposable income) may have a long-term impact on water supplies across the country, especially in the drier areas. Augmenting water supplies in Namibia is problematic because of the lack of perennial rivers and limited groundwater reserves, and sourcing additional supplies will be costly. Emphasis must be placed on recycling and water conservation measures in both the design of buildings as well as in school curricula.

**Community health.** The cumulative effects of the Education Project on community health will be significant. Access by learners to a better or improved water supply, sanitation, and classrooms; electricity; and information about disease will result in a spiral of well-being, which will be highly significant in the long-term (see also Section 7.1).
Through the provision of better schools, improved training of teachers in math and science, COSDECs, and easier access to funding for tertiary education, a better educated and skilled population should have the potential to earn higher salaries, in turn reducing dependence on the land and allowing access to better health care, resulting in better health all around.

**Vulnerability of local people.** Providing greater access to a better quality education in particularly impoverished areas should mean that young people will have livelihood alternatives, in turn reducing their dependence on the land and hence their vulnerability to droughts and floods.

The Education Project is specifically pro-poor and will target girls and marginalized groups, e.g. the San community. The designs for the new schools also include facilities for disabled learners. Thus, it should have a high positive long-term effect on these vulnerable groups.

Less easy to predict is the impact of better schooling on cultural traditions, customs, and social networks. Will more people leave the land with greater urbanization as the result? Will traditional family networks break down as girls become educationally emancipated? Will the changes be sudden, where there is higher probability of social disruption, or will they be incremental over time, with perhaps less social upheaval? The answers to these questions may only become obvious once the Education Project is complete.

Better education and awareness about diseases at all institutions being proposed should reduce the vulnerability of local people to disease.

Providing better education and skills to young Namibians may mean that: a) fewer people in the future will be dependent on the land (thus resulting in less land degradation); and b) those who work the land may be better informed about rangeland management (especially if trained in issues such as climate change, and land management.)

**Biophysical environment.** The existence of schools, RSRCs, and COSDECs should not adversely affect any ecological functioning, processes, species abundance, and diversity. Improved teacher training in physical sciences may improve learners’ awareness of the environment and the need for protection and conservation.

The only possible negative impact would be if a new school over-pumps its borehole, resulting in a reduction in yields of other boreholes nearby and a lowering of the groundwater table.

**Institutional.** The Education Project will have a beneficial effect on all institutional aspects, especially those relating to access to basic education and vocational training. In addition, the project will have high positive impacts as a result of better access to information through improved learning and study facilities, as well as better access to information through improved literacy, grid power connections, and the Internet and cellular networks (Volume 2, Section 11, Table 11.2).

### 4.4.3 Summary of Impact Assessment

Overall the social and economic benefits of the Education Project to the country as a whole in the long-term outweigh the mostly localized, short-term negative effects associated with the construction of the new facilities. The latter can mostly be easily controlled through careful design and engineering as well as the implementation and rigorous compliance monitoring of the EMP.
5.0 Beneficiary Analysis

5.1 Gender and Social Issues

The Education Project is expected to lead to beneficial gender and social impacts by providing improved services and facilities to targeted communities. The COSDECs will benefit unemployed youth, women, and low-skilled adults by providing training in entrepreneurship, business management, and other vocational skills critical to the local labor market. Furthermore, the Tertiary Education Finance Activity may be structured to partially subsidize loans or provide scholarships to the most disadvantaged. The proposed improvements at the 47 secondary schools, including the provision of water and sanitation and new construction designs that allow disability access, will improve the quality of and access to schools for female and disabled learners. Several of the proposed 47 schools will also benefit the indigenous San population.

However, potential adverse social impacts could also result from the Education Project activities and will need to be adequately identified and addressed during project implementation. For the 47 schools, the HIV/AIDS education needs strengthening, as the guidance and support to teachers providing this education is limited. The MOE HIV/AIDS unit will be required under the project to provide an HIV/AIDS Specialist and follow-up training and support to teachers. HIV/AIDS training will also be required for the construction contractors involved not only in the 47 schools activity but also all other activities involving construction. Furthermore, the number of orphans at the 47 schools is unexpectedly high at 28%, and they will need to be considered in the project activity. The hostels for female students at several of the 47 schools also have limited to no supervision, which will need to be addressed during implementation (MCC Consultation Memo, 2008).
6.0 Resettlement Needs

Limited resettlement impacts are anticipated to result from the Education Project activities. MCA Namibia and MOE have been coordinating with local communities on the acquisition of land in compliance with World Bank Operational Policy 4.12 on Involuntary Resettlement in advance of the MCC investments. For the secondary schools, potential resettlement impacts have been identified at three proposed schools; however these impacts all relate to existing land disputes that the MOE would be responsible for resolving prior to the MCC investment. For the RSRCs, negotiations on compensation of the land acquired for the centers have resulted in the municipalities providing the land without payment in view of the long-term educational, social, and economic benefits to the population. In the community of Helao Nafidi, the compensation negotiations have yet to be finalized, and this will need to be resolved to ensure resettlement impacts have been appropriately managed (MCC Consultation Memo, 2008)
7.0 Linkages, Synergies, and Cumulative Impacts

The following discussion addresses the Terms of Reference for the SEA tasks, specifically IV 2.5.2 Cumulative Impacts, which requires comment on the following:

- Define unidentified opportunities for synergies between education program actions and livestock, tourism, and INP training needs (i.e., whether the education investment can provide needed vocational education for tourism employees so they can take on more responsibility and not remain gardeners/cleaning staff).

The discussion on linkages, synergies, and cumulative effects is based on the outputs from a cumulative effects workshop held in Windhoek on 28–29 August 2008.

7.1 Key Cumulative Impacts

The key cumulative impacts within the education theme relate to localized negative impacts during construction and the benefits of the project on the social and economic structures of the region (see Volume 2, Section 11).

A number of potential impacts could occur on and immediately around construction sites, especially if the sites are near other construction projects. The combined effects of dust, noise, water abstraction, pollution, waste, construction traffic, influx of labor, and land degradation could be locally quite significant without the implementation of the EMP—especially on local residents and vulnerable people. However, as mentioned in the impact assessment, most of these impacts should be short-term in nature and can be readily mitigated. More far reaching would be the cumulative effects of the various education activities on aspects such as water and energy use, waste management, health, and skills availability.

Table 7.1 contains proposed methods by which the negative impacts could be minimized and opportunities could be maximized.

Table 7.1 Opportunities for minimization of negative cumulative impacts and maximization of benefits

<table>
<thead>
<tr>
<th>Goal</th>
<th>Construction Activities</th>
<th>Implementation and Operation of Education Project</th>
</tr>
</thead>
</table>
| Maximize water conservation and minimize water use | • Hold worker awareness talks  
• Enforce compliance with EMP  
• Determine sustainable borehole yields and enforce pumping limits  
• Provide additional boreholes for water supply in villages  
• Include water conservation measures in building design, e.g., dual flush toilets, rainwater collection systems, and gray water irrigation systems  
• Rehabilitate the sites with water-wise plants | • Include water conservation in school and COSDEC curricula  
• Hold water awareness campaigns at the RSRCs  
• Regularly maintain boreholes |
| Reduce loss of productive land and maximize planning fit | • Build new school structures within existing school properties  
• Use vacant municipal land zoned for the purpose (schools, COSDECs, and RSRCs)  
• Pay land owners fair land value for land  
• Pay compensation to any land users for loss of access to resources (grazing land, fruit trees, etc.) | • Include topics such as rangeland management, soil conservation, erosion control, and the impacts of climate change in school curricula  
• Hold land management awareness campaigns at RSRCs |
<table>
<thead>
<tr>
<th>Goal</th>
<th>Construction Activities</th>
<th>Implementation and Operation of Education Project</th>
</tr>
</thead>
</table>
| Maximize economic opportunities for local businesses                 | • Ensure that building contractors use local SMMEs for skills and services, e.g., painting, bricklaying, plumbing, catering, cleaning, and security  
• Provide on-the-job training where possible  
• Include local COSDEC trainees in building programs  
• Train local women in seed collection, plant cultivation, soil preparation, etc. as part of the rehabilitation program |
|                                                                      | • Relate economic and management science (EMS) courses to local skills demands for craft, tourism, and INP businesses, e.g., basic accounting, marketing, and sales  
• Relate geography and natural science courses to plants and animal species in own area and link with conservancies |
| Minimize impacts on health                                           | • Hold worker awareness talks on HIV/AIDS, TB, STDs, and other diseases, particularly focusing on prevention  
• Provide ventilated improved pit-latrines (VIPs) in place of pit latrines at schools  
• Prevent pollution of surface water resources  
• Provide potable water to all education facilities  
• Ensure proper waste disposal and management practices to reduce health impacts and attention of scavengers (rats, mice, baboons and monkeys, hyenas, elephants, etc.)  
• Apply dust suppression measures on a regular basis  
• Only clear the minimum area required for construction to reduce dust  
• Observe scheduled work hours to minimize noise disturbance |
|                                                                      | • Provide health education at all schools, COSDECs, and RSRCs relating to all aspects of health, e.g., hygiene, influenza, burns, first aid, TB, STDs, and HIV/AIDS  
• Ensure classrooms are maintained to provide good ventilation, protection from the elements, and good lighting  
• Develop food gardens at each school and use for food as well as for teaching aspects, such as soil management, math, EMS, and water conservation |
| Minimize waste and maximize recycling opportunities                   | • Hold worker awareness talks relating to waste management in general and on site in particular  
• Provide sufficient number of bins for waste  
• Ensure waste removal by municipality or dispose all non-hazardous waste in a fenced and properly managed pit  
• Sell, give, or recycle all discarded construction materials, such as cardboard, timber, wire, and scrap metal. Consider starting a recycling center for glass, paper, and plastic |
|                                                                      | • Install recycling centers at schools, COSDECs, and RSRCs for community use  
• Recycle/reuse paper in schools |
| Maximize use of renewable energy and minimize power use              | • Design new buildings to be energy efficient—cool in summer, warm in winter—to reduce need for artificial heating/cooling  
• Install solar water heaters on all new buildings, including teacher houses  
• Install solar panels for other electrical use where possible  
• Use wind pumps for water pumping where possible and maintain |
|                                                                      | • Hold regular energy conservation campaigns including use of solar cookers, fuel efficient briquettes, power reduction measures, etc. |

The positive cumulative social and economic effects (synergies) are more difficult to quantify and certainly more difficult to achieve; this is partly because many of the effects are indirect and depend on a number of other factors to be in place for the benefits to be achieved. For example, it might be argued that better quality education will increase job prospects and result in higher salaries, thus allowing people
better access to health care. This assumes that better health care facilities are available, which is the responsibility of a ministry other than the MOE and beyond the scope of the MCA Compact. Nevertheless, there is the potential for compounding of benefits as a direct result of the Education Project, as shown in Figure 7.1.

### 7.2 Linkages and Secondary Effects of Education Project Activities

Figure 7.1 demonstrates the linkages and potential negative spin-offs of the Education Project. As can be seen, there are several interlinked “virtuous circles,” but also negative spirals indicating the need for careful management so as to avoid unintended consequences (see Section 8.1).

The objective of the Education Project is to improve the quality of the workforce in Namibia by enhancing the equity and effectiveness of the basic, vocation, and tertiary education and technical skills. A better educated and skilled workforce should in turn, result in better job prospects (for example, in the tourism sector or cultivation of INPs). This should ensure that the beneficiaries of the MCA Program get higher salaries than they might otherwise have obtained. With more disposable income, there will be increased spending on health and education, and the cycle repeats (Figure 7.1). In addition, greater disposable income will result in an increase in economic activity that will create more business opportunities in the country.

Another spin-off benefit could be that with improved job prospects, people are less dependent on the land for their survival and may even chose to relocate. This could result in less pressure on limited natural resources (especially in the NCAs), meaning less land degradation, an increase in land productivity, and less vulnerability to exogenous change on the part of those still living a subsistence existence. This, in turn, will result in less pressure on the land, and the virtuous circle is completed (see Figure 7.1).

A flip side exists to these benefits. Better qualified children and young adults will tend to migrate to urban areas in search of jobs—potentially leading to increased urbanization and the attendant problems of urban poverty (crime, drugs, alcohol, etc.). The higher costs of living in urban areas, together with the lack of affordable housing and services, often means that people have to live in poor conditions and experience a decline in living standards. This may result in less money available for schooling, health care, and food, which in turn could jeopardize the ability of people to find and maintain a job. In some cases, people may then resort to crime to make ends meet, and the spiral of urban poverty may escalate (Figure 7.1).

Another real concern is that, as improvements are made in the education sector as a whole, expectations for well- or better paid jobs will be raised. There are several examples from around the world (e.g., in Nigeria in the mid-1960s) where governments focused on improving education without a concomitant increase in job availability and creation of a macro-economic policy favorable to investment and entrepreneurship. Disgruntled job seekers, including university graduates, staged demonstrations and riots to protest against the lack of employment opportunities.

This is unlikely to happen in Namibia in the near future because the southern Africa region is currently experiencing a major skills shortage due to the construction boom associated with the 2010 Soccer World Cup and intense mining development triggered by high mineral prices. After 2010, the demand for artisans and graduates may diminish and lead to discontent, social tensions, and possibly political instability. The latter would have major negative impacts on the Namibian economy, which is heavily dependent on foreign investment and overseas tourism. A second potential outcome would be trained Namibians leaving the country. Investment in their schooling and training would therefore be lost on a temporary or permanent basis. Lastly, is the potential for “de-schooling,” whereby a person forgets skills previously learned (e.g., in math and English) if s/he does not practice them regularly in the workplace.
Figure 7.1 Positive and negative linkages resulting from a better educated and skilled workforce
Therefore a protracted period of unemployment could lead to “unlearning,” and the ability to find well-paid employment in the future could become less certain, making those without jobs more vulnerable to the cycle of rural or urban poverty (Figure 7.1).

In addition, increased economic activity and a more urban lifestyle result in an increased demand for natural resources, which puts greater pressure on land and water resources and increased demand for power, waste disposal services, etc. These impacts may be felt far from the source—e.g., an increased demand for power due to heightened economic activity in Windhoek will require more power generation from the thermal power stations in South Africa. The impacts of increased power production include water, air, and land pollution and severe health impacts from point source and non-point source emissions on local poor communities in South Africa—far from Windhoek. These people become sick due to air pollution and less able to function effectively in the workplace, which in turn means lower/less salaries, lessening their ability to pay for health care and education, and the negative cycle of poverty goes full circle (Figure 7.1).

It is therefore extremely important to have in place the conditions necessary to ensure that cumulative positive effects materialize and to prevent negative repercussions (see Section 8.1).

7.3 Opportunities for Optimizing Synergy with Other Program Components

Tourism. A better quality education could result in the ability for rural people to play a greater role in the tourism sector, through direct jobs, improved stewardship of conservancies, and management skills, especially for women (e.g., in craft production and sales, and sale of fresh produce to lodges, Figure 7.1). The opportunities for synergy with the tourism sector relate mostly to the inclusion of tourism-related examples into the secondary school curriculum so that young people are equipped to enter into the sector as junior managers, marketing and sales staff, service providers, tour guides, rangers, drivers, etc. This would not require introducing new subjects, but could be achieved through focused teacher training workshops. These teachers could then use tourism-related examples and conduct field trips as part of existing school curriculum subjects such as:

- **EMS** (management, accounting, marketing and sales relating to lodges, conservancies, craft production, etc.)
- **Entrepreneurship** (business management and sustainability)
- **Geography and science** (ecological functioning, names of species, animal behavior, habitat management, erosion control, etc.)
- **English and German** (language skills to communicate with international clientele)
- **Math** (basic numeracy to enter into any level of business management)

Furthermore, there are opportunities for schools to enter into partnerships with local conservancies and national parks to teach children about the value of Namibia’s natural heritage.

In addition, appropriate skills in targeted subjects such as hospitality, tour guiding, administration, basic computer literacy, and entrepreneurship can be obtained at the VTCs and proposed COSDECs.

Rangeland and livestock management. Better quality schooling and access to vocational and tertiary education could result in a number of synergies with the rangeland and livestock management theme. As with the tourism sector, better education could result in learners with skills that would facilitate jobs within the livestock sector, as well as provide them with a greater understanding of rangeland and livestock management, less dependence on livestock for cash, improved management skills and
entrepreneurship within the sector, and increased spending power for fertilizers, vaccinations, veterinary services, etc. (Figure 7.1). This will result in a number of cumulative benefits within the sector.

The opportunities for synergy with the rangeland and livestock management theme relate mostly to the inclusion of examples relevant to the sector into the secondary school curriculum so that young people can add value as marketing and sales staff, service providers, agricultural extension officers, veterinarians and/or assistants, etc. The long-term success of the CBRLM program will depend to a large extent on the understanding of its importance by local formers now and in the future. A better quality of education will also assist future farmers in accessing markets and veterinary services. Thus it is recommended that school curricula in relevant subject areas can assist through including:

- **EMS** (management, accounting, marketing and sales using examples relating to meat and production of animal products, craft production, etc.)
- **Geography and science** (soil science, carrying capacity, land degradation, land management, climate change, erosion control, etc.)
- **English and local languages** (language skills for effective communication)
- **Math** (basic numeracy to enter into any level of business management)

School leavers will be able to augment skills within the livestock industry at the VTCs and COSDECs through courses on meat processing, leather tanning and preservation, administration, and entrepreneurship.

**Indigenous natural products.** Similar synergies can be expected in the INP sector due to an improved quality of education. Thus, the Education Project will assist people already in INP production and those who may want to enter this sector of the economy, especially women. Improved skills in EMS, math, and entrepreneurship, and a new USAID-funded school program (Section 2.14) should benefit this burgeoning sector and local people, rather than outsiders.

The opportunities for synergy with INP theme relate mostly to the inclusion of examples that are relevant to the sector into the existing school curriculum so that young people can add value as producers, INP processors, junior managers, marketing and sales staff, service providers, agricultural extension officers, etc. Some recommendations include:

- **EMS** (management, accounting, marketing and sales using examples relating to the INP business, plant production, beneficiation of products [e.g., oils and creams])
- **Entrepreneurship** (business management and business sustainability)
- **Geography and science** (soil science, carrying capacity, land degradation, land management, climate change, erosion control, etc.)
- **English and local languages** (language skills for effective communication with local producers and international markets)
- **Math** (basic numeracy to enter into any level of business management).

### 7.4 Cumulative and Antagonistic Effects of the Education Project with other Program Components

The main cumulative negative effect of the Education Project activities with other program components is the potential impact on construction materials and skills. Many construction projects are proposed in the overall program:
• Five new veterinary service centers;
• Two community-based quarantine camps;
• Construction or renovation of 20 administrative facilities in Etosha National Park (ENP);
• Construction of 115 new staff houses in ENP;
• Two new lodges in northeastern community parks;
• Construction or renovation of 47 schools;
• Renovation of five COSDECs and construction of four new COSDECs;
• Construction of three new RSRCs; and
• Construction of an unknown number of teacher houses.

Although these are separated geographically and it is therefore unlikely that there will be a cumulative impact spatially, there may well be a coincidence in the timing of construction. Due to the regional construction boom linked to high mineral prices, the World Cup, and other large infrastructure projects, the area is experiencing shortages (and thus higher prices) of building materials (e.g., cement), equipment (e.g., drilling rigs), and skills. Local construction companies are also at full capacity, and many tenders are being awarded to foreign companies. Thus although the MCA Program construction projects are relatively small in comparison other regional undertakings, they may be negatively affected and the overall program of delivery could be compromised.

In terms of land use, the Education Project activities will be located in existing schools or in municipal areas. There will, therefore, not be any land use conflicts with other program components.
8.0 Conclusions and Recommendations

8.1 Sustainability Analysis

The Education Project will undoubtedly be highly beneficial to the overall education system in Namibia, with net long-term advantages. However, the government needs to address the implications of a more educated and skilled workforce in terms of macro-developmental issues such as the effects of increased urban migration on affordable housing, water supply, energy supply, demand for goods and services, and demand for schooling, health care, and other community services. Unless these are addressed and economic conditions created to encourage SMMEs and international investors, the beneficiaries of improved education in Namibia may well become disillusioned and either leave the country (“brain drain”) or revert back to the land—neither of which is sustainable in the long-term (Figure 7.1 and Section 7.2).

Rather than implementing a project that supports only infrastructure improvement or only training, the combination of infrastructure development with teacher training and textbook supply should strengthen the sustainability of the overall intervention.

8.1.1 Key Conditions/Requirements for Success

The thematic analysis of the Education Project identified several conditions that, if in place, will contribute to a strong enabling environment and will more readily lead to project success. While many of these are outside the scope of MCC/MCA, MCC/MCA may wish to include these in consultations with other donors and with GRN. Table 8.1 presents the key issues and points of intervention (as identified in Figure 7.1), the required management actions, key performance indicators, and the other donors and government authorities that need to be involved.

Table 8.1 Interventions required for successful implementation of the Education Component

<table>
<thead>
<tr>
<th>Issue</th>
<th>Recommended interventions</th>
<th>Key Performance Indicators</th>
<th>Responsibility/ Due date/ frequency</th>
</tr>
</thead>
</table>
| No job opportunities for school and COSDEC graduates | Investor-friendly macro-economic policies and framework | • Time to register new companies is reduced  
• Increase in no. of companies registered per year  
• Policy developed and implemented | Ministry of Trade and Industry (MTI) (leverage from MCC/A) With immediate effect |
| Improved support for SMMEs | | • Increase in no. of SMME companies registered  
• Introduction of SMME support services (incubators) | MTI (leverage from MCC/A) End 2009 |
| Ensure alignment of skills with demand through consultation between MOE and Namibia Chamber of Commerce and Industry (NCCI) | | • Increased % graduates from COSDECs and VTCs employed  
• Increase in pass rate and grade in math and science  
• Increase in no. of qualified teachers in math and science | MOE By end of Compact (2014) |
<table>
<thead>
<tr>
<th>Issue</th>
<th>Recommended interventions</th>
<th>Key Performance Indicators</th>
<th>Responsibility</th>
<th>Due date/ frequency</th>
</tr>
</thead>
</table>
| Lack of relevant curricula to create required skills, especially in natural sciences | Review of math and science curricula to ensure outcomes-based education                  | • Amendments to curricula where required  
• Improvements in grades in math and science                                      | MOE/Donors          | With immediate effect |
| Lack of qualified teachers in math and science and lack of adequate teacher training facilities | Continued support for training of teachers in math and science in terms of curriculum content, equipment, and facilities | • Increase in no. of qualified math and science teachers per year as per MOE goals  
• Improved standards and grades of graduates from teacher training colleges   | MOE/Donors          | End of 2013           |
| Increase in urbanization                                             | Develop and implement integrated development plans (IDPs) for each urban area using various economic scenarios of growth | IDPs are developed and implemented in all urban areas of Namibia                        | Municipalities; Ministry of Regional and Local Government, Housing, and Rural Development | End of 2010          |
| Municipalities to provide affordable housing and services (water, power, sewerage, waste) |                                                                                           | • Reduction in no. of people in shacks  
• Increase in total no. of new houses per annum (to meet targets)  
• Provision of sufficient capacity in water, sewerage and waste management systems  
• Increase in formal water and power connections                                 | Municipalities       | End of 2013           |
| Increase capacity of clinics and hospitals                           |                                                                                           | • Increase in no. of beds  
• Reduction in doctor: patient ratios                                          | Ministry of Health and Social Services       | Ongoing             |
| Increase capacity of urban schools                                   |                                                                                           | • Reduction in teacher:pupil ratio  
• Reduction in classroom:pupil ratio  
• Increase in no. of classrooms built                                        | MOE, MCC/A         | Ongoing              |
<table>
<thead>
<tr>
<th>Issue</th>
<th>Recommended interventions</th>
<th>Key Performance Indicators</th>
<th>Responsibility</th>
<th>Due date/ frequency</th>
</tr>
</thead>
</table>
| Increased demand for natural resources | + Improve technologies for farmers to maximize output  
+ Apply community-based rangeland and livestock management | + Higher output/yield per unit land area | Ministry of Agriculture, Water, and Forestry (MAWF), NGOs, MCC/A | With immediate effect |
| –Land | + Revise/develop/ implement water demand management policies  
+ Foster public-private water development schemes  
+ Develop small-scale desalination plants | + Decrease in per capita water consumption levels  
+ Decrease in water consumption per unit of production  
+ Increase in no. of public-private schemes  
+ Increase in no. of new desalination plants | MAWF, Namibia Water Corporation, local authorities, private companies | Ongoing |
| –Water | + Revise/develop/ implement energy demand management policies  
+ Foster public-private energy projects (e.g., Kudu gas)  
+ Develop small-scale off-grid renewable energy production | + Decrease in per capita energy consumption  
+ Decrease in energy consumption per unit of production  
+ Increase in no. of public-private projects  
+ Increase in no. of off-grid renewable energy schemes | Ministry of Mines and Energy, national power company, NGOs, private companies | Ongoing |
| –Energy | + Decentralization of MOE funding and administration to the Regional Directorates | + Decentralization process to be completed within stipulated timeframe  
+ No. of teacher contracts finalized per year to increase by x%  
+ Increase in funding for transportation (total and % increase per year) | MOE | End of 2009 |
| Ineffective administration | + Improve capacity of school boards of governors regarding governance | + Increase in no. of school boards receiving training per year in governance | MOE/Donors | Ongoing |
| Inadequate funding | + Partnerships with existing donors should be continued.  
+ New partnerships should be created with businesses/ industries in each area | + No of donor projects increased or maintained  
+ Donor forums set up  
+ No of private-public partnerships in education to increase by x% each year | MOE/Donors | Ongoing |
|                           |                           |                           | NCCI and Chamber of Mines, individual businesses (e.g., mines) | Ongoing |
### Issue | Recommended interventions | Key Performance Indicators | Responsibility | Due date/frequency
---|---|---|---|---
Shortage of building materials, skills, supplies, and services | Phase activities over time. Prioritize construction activities. Stockpile when necessary. | • Flow of materials is not disrupted
• Construction is sequenced, with flexibility where required | MCA | Early 2009 for planning. Ongoing during implementation

8.2 **Recommended Mitigation Measures**

8.2.1 **Environmental Safeguards for Construction Activities**

- The recommendations below should be integrated into Project designs and into activity-level EIAs and EMPs (see Education Implementation Tools 3 and 4). Requirements of the EIA/EMP should be attached to all construction tender documents;
- The evaluation of tenders should include an adjudication of the tenderers’ ability to implement the EMP;
- The implementation of EMPs should be monitored and compliance enforced. Implementation should be undertaken by a dedicated person appointed specifically to carry out this task. Without monitoring, it is unlikely that the mitigation measures recommended in this report will be implemented.

The following *mitigation measures* are required to minimize environmental and social impacts identified in the impact assessment process (Section 5). While not required in terms of the Compact agreement/deliverables, to help ensure sustainability and project success, the SEA team highly recommends that the *enhancements* (Section 8.3) are implemented as part of project design and/or required through the EIA/EMP process.

**To minimize impacts to livelihoods of local people during construction:**

1. Maximize water recycling.
2. Provide regular talks on water conservation to construction workers.
3. Use municipal water supplies where possible.
4. Pump water within sustainable yield.
5. Ensure sites do not remove land from grazing or cultivation. Pay compensation if productive land or fruit trees are lost due to construction.
6. Apply principle of willing buyer/willing seller when acquiring land for project sites.
7. Do not appoint one contractor for all construction work. Use locally or regionally based contractors.
8. New boreholes may need to be drilled to supply water for construction. Apply all pollution control measures as set out in the EMP to avoid contamination of drinking water supplies.
9. Proper ablution facilities shall be provided at all construction camps and workers shall be made aware of hygiene.
10. Observe work hours, apply noise control provisions in EMP, and schedule noisy activities in consultation with school principals to avoid exam times and other key school functions.
11. Carry out dust suppression at construction sites and along access roads during the entire construction period.
12. All contractors need to prepare and apply a waste management plan for all sites to control the disposal of all solid waste at construction sites and camps.
13. Carry out HIV/AIDs and STD awareness and prevention campaigns at all construction sites.
(14) Conduct proper hydrological investigations and design storm water drainage, culverts, and diversions to accommodate flood water.
(15) Carefully control the influx of migrant job-seekers and the extent of social interactions between contractors and local villagers.
(16) Conduct an EMP at all sites, including a rehabilitation plan to ensure that ground disturbed during construction is contoured and re-vegetated to prevent wind and water erosion.

To minimize impacts to the biophysical environment during construction:

(1) Prepare and apply rehabilitation plans at each construction/renovation site.
(2) Avoid affecting heritage resources through careful site selection and discussions with village elders.
(3) Hold talks on waste disposal and pollution prevention to improve awareness of workforce.
(4) Pump only within sustainable yield of borehole to avoid reducing water table depth.

To minimize other environmental and social impacts during construction:

(1) Schedule construction in consultation with MOE and school principals to minimize disruption of classes, exams, and other school functions.

8.2.2 Recommended mitigation measures for the operation phase of schools, teacher houses, RSRCs, and COSDECs:

To minimize impacts on livelihoods:

(1) Where necessary, construct new or expand existing hostels to cater for increased numbers of orphans, at both primary and secondary schools.
(2) Where flush toilets will be provided, i.e., at COSDECs and RSRCs, design all toilets with double flush systems.
(3) Install automatic water switch-off taps.
(4) Provide the VIP latrines since these are more hygienic and healthier than basic pit latrines (recommended in the Compact).
(5) Ensure that drinking water boreholes are not used for cattle drinking, as this increases the risk of disease from water pollution.
(6) Put in place a regular borehole maintenance program to ensure optimum performance.
(7) Recycle all grey water to school gardens.
(8) Hold regular water conservation awareness campaigns.
(9) Plant water-wise gardens.
(10) May need to augment existing water treatment plants or install water purification systems in school systems. This is technically possible but is quite expensive to implement.
(11) Ensure COSDECs are designed to minimize noise impacts on surrounding residences.

To minimize impacts to biophysical resources during operation phase:

(1) Pump only within sustainable yield of borehole to avoid reducing water table depth.

8.2.3 Other Recommendations for Vocational and Library Program Improvements

The following recommendations relating to vocational education centers and training were identified during the study:
• Encourage the establishment of the National Training Authority and Supervision, Certification and Quality Control agencies as per Cabinet decision.
• Encourage the establishment of regulations for the implementation of the training levy in accordance with the National Vocational Training Act, 1994 (Act No. 18 of 1994).
• Ensure proper supervision for CBET activities in order to implement CBET programs at the VTCs.
• Implement the VET structure so that it enables NTTC to recruit professional staff to administer testing and certification programs.
• Establish proper coordination between NPC and the MWTC in the implementation of capital projects.

This sector analysis found an immense demand and an enormous potential for the integration of ICT in library and archives services. The use of electronic information is a key factor in providing equitable access throughout the country for enhancing education and promoting a knowledge-based economy, and needs to be vigorously promoted. Thus, the following recommendations are made:

• Improve nationwide access to information by enhancing public ICT access through the community library network and all other libraries. Expand national Internet connectivity bandwidth to enable the productive utilization of national and global information resources.
• Provide a staff training program to create national expertise in the management and provision of electronic resources. Information services require a professional staff.
• Promote the hiring of a professional librarian in each region.
• Encourage the expansion of educational support for studying information and archival science to overcome the critical shortage of professionals. A national restoration and preservation laboratory could be established in addition to the creation of local content on the Internet, in line with the ICT Policy for Education (MOE Web site).

8.3 Recommended Enhancements

The SEA team recommends the following enhancements to maximize the Education Project’s social and environmental benefits and to improve the probability of project success and sustainability. Although these enhancements are not required in terms of the Compact agreement/deliverables, to minimize negative environmental and social impacts, the SEA team highly recommends that they be implemented.

To maximize environmental and social benefits to local people’s livelihoods during construction phase:

(1) Ensure sites fit into local town planning scheme.
(2) Employ local SMMEs where possible as subcontractors to the main building contractors. Provide on-the-job training.
(3) Include in the waste management plan opportunities for recycling materials such as cardboard, wood, wire, compost, and glass.
(4) Use local people in rehabilitation activities, e.g., collecting native seeds, preparing the soil, and planting vegetation.
(5) Strongly promote tree planting around the new schools.
(6) Develop food gardens as part of the rehabilitation activities.
To maximize other environmental and social benefits during construction phase:

(1) Use the opportunity to get learners involved in the process, e.g., understanding construction and assisting in painting and planting gardens and trees.
(2) Construction contracts should require contractors to employ local SMMEs and provide on-the-job training in various building activities, e.g., painting, bricklaying, and civil works.

To maximize environmental and social benefits to local people's livelihoods during operation phase:

(1) Recommend that VIP toilet systems be installed at schools.
(2) Implement site rehabilitation plans.
(3) Implement major opportunities for waste recycling programs at each institution, e.g., paper, scrap metal, cardboard, glass, and plastic. Each institution should have its own recycling awareness programs and initiatives.
(4) Coordinate with the MCA Compact Agriculture Project. Include issues such as rangeland management and climate change in school curricula.
(5) Conduct regular awareness sessions about diseases at schools and COSDECs and provide information in an easily accessible form at RSRCs.

8.4 Key Indicators of Success

In addition to the indicators noted in the MCA Compact with the GRN, the following environmental indicators should be added for the construction period:

- No reduction in existing village borehole yields.
- No loss of productive land for new buildings or infrastructure.
- No resettlement.
- Construction must not impede traffic, rights-of-way, footpaths, etc.
- At least five local SMMEs should be engaged on each building contract.
- No pollution of water courses to the extent that it reduces the potable water quality to a lower category.
- Only VIPs or better toilets to be installed at all schools.
- No complaints of dust or noise.
- Daily talks on relevant health, safety, and environmental issues.
- All new buildings to include water and energy saving devices and designs.
- All construction sites to be rehabilitated, so that there is no significant erosion or invasion of problem plants.
- All waste to be properly disposed as per the EMP.
- No school teaching or learning time to be lost as a result of construction activities.
- All COSDEC trainees to be employed on renovation projects.

8.5 Project Level Environmental Guidelines

Guidelines for which project activities will require an EIA or an EMP are provided in Section 4 and framework EIAs and EMP principles are provided as annexes to the main report (Education Implementation Tools 3 and 4).
9.0 List of References


MOE Web site: www.mec.gov.na

Namibia Local Government Web site: www.op.gov.na

Polytechnic of Namibia Web site: www.mec.gov.na


UNAM Web site: www.unam.na


Youth Policy Web site: www.ydn.org.za
Implementation Tool 1

Social-Environmental Assessment Tool: Public Participation
1. Public Participation to Minimize Conflict when Investigating the Opening Up of *de facto* Illegally Fenced Land Holdings

Public participation/stakeholder engagement has been identified as a key step in achieving the success of many of Livestock Theme activities. Below are considered best practice guidelines in public participation. The Calabash Program, a leading player in environmental impact assessment (EIA) and public participation processes, has tested various public participation models. Information on the Calabash Program and detailed recommendations for public participation can be found at [http://www.saiea.com](http://www.saiea.com).

*Best Practice in Public Participation (Calabash Program):*

- Early engagement of stakeholders
- Inclusivity
- Transparency and honesty
- Independent facilitation
- Special efforts for marginalized communities
- Accessibility
  - Information
  - Venues
  - People
  - Ample opportunity for involvement, comment and to exchange views
- Ongoing feedback and acknowledgement
- Respect and fairness
- Efficiency of process

The Public Participation Strategy being developed as part of the SEA, will elaborate on the process to be used for effective engagement of stakeholders.

Screening document as required by the EMA (2007) to be used to determine impacts of boreholes and new quarantine facilities (see Implementation Tool 2).
Implementation Tool 2

Environmental Screening Questionnaire for Projects
SCREENING QUESTIONNAIRE FOR PROJECTS

By

MINISTRY OF ENVIRONMENT & TOURISM
DIRECTORATE OF ENVIRONMENTAL AFFAIRS

The completion of this questionnaire is a requirement under section 20 (1) of the Environmental Management Act
PURPOSE OF THE QUESTIONNAIRE

The information you provide in this questionnaire will provide the Government to gain a clear understanding of your proposed project.

Projects that are likely to have a significant impact on the environment may not go ahead unless an Environmental Assessment (EA) has been done first, and only if EA can demonstrate that it is possible and feasible to keep impacts to acceptable levels.

Nearly all projects have some impact, but some projects are too small and impacts so low, that it may not be necessary to do a full EA. On the other hand, some projects could have serious environmental impacts, and it is essential that we identify these before the projects are implemented. If an EA is not done, we may only discover the impacts after the project implementation. By then, it is usually too late to avoid the impacts. If this happens the developer might have to spend a lot of money fixing the problem or even abandon the project altogether.

The information you provide in this questionnaire can help us to make the right decision of whether an EA should be done or not, the level of detail of the EA, the main issues which should be investigated, and so on. This guides all of us in our future planning and could save money and time in the long run.

The developer must complete this questionnaire accurately, honestly and comprehensively. The Environmental Commissioner and relevant ministry will jointly decide on whether the EA is necessary or not. Their decisions based on whether the project is likely to have significant effect on the environment by virtue of its nature, size or location.

Your co-operation is essential.
GENERAL INFORMATION

Name of proposed project: _______________________________________________________

Location of proposed project: __________________________________________________

Name of Proponent / Developer: _________________________________________________

Contact Person: _______________________________________________________________

Address of Proponent / Developer: _______________________________________________

___________________________________________________________________________

Tel: _______________________________________________________________________

Fax: _______________________________________________________________________

**NB:** As stated on page 2, the information to be provided in this questionnaire will assist the Ministry to determine whether an EA is required or not. Therefore such information must be as truthful and reliable as possible. It must be noted here that the proponent is accountable for any wrong and misleading information that may be provided in this questionnaire. From this perspective, any person who completes this questionnaire **must read and sign the declaratory statement provided on page 14 of this questionnaire.**
PROJECT SUMMARY

Briefly describe the nature and purpose of the project. Provide key information on the project main activities, industrial processes, raw materials, infrastructure, lifespan and closure. If available, attach a map, ground plan and a copy of pre-feasibility or feasibility reports.
### Project Information

**General**
- Is a license/permit required for the activity?
- Is the project an extension of an existing activity?
- Will the project involve land disturbance, site clearance, earthmoving, or underground workings?
- Will the project involve re-zoning?
- Will the project involve the transport, storage, handling, production or use of toxic or hazardous substances?
- Will the project require the construction of facilities to bring power or water to the project?
- Will new roads be constructed?
- Will construction or operation of the project generate large volumes of traffic?

<table>
<thead>
<tr>
<th>Details / Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>__________________</td>
</tr>
<tr>
<td>__________________</td>
</tr>
<tr>
<td>__________________</td>
</tr>
<tr>
<td>__________________</td>
</tr>
<tr>
<td>__________________</td>
</tr>
<tr>
<td>__________________</td>
</tr>
<tr>
<td>__________________</td>
</tr>
<tr>
<td>__________________</td>
</tr>
<tr>
<td>__________________</td>
</tr>
<tr>
<td>__________________</td>
</tr>
<tr>
<td>__________________</td>
</tr>
<tr>
<td>__________________</td>
</tr>
<tr>
<td>__________________</td>
</tr>
<tr>
<td>__________________</td>
</tr>
<tr>
<td>__________________</td>
</tr>
<tr>
<td>__________________</td>
</tr>
<tr>
<td>__________________</td>
</tr>
<tr>
<td>__________________</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>General Continued</td>
<td>Details / Comments</td>
<td></td>
</tr>
<tr>
<td>----------------------------------------------------------------------------------</td>
<td>--------------------</td>
<td></td>
</tr>
<tr>
<td>Will explosives be used?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Will the project have large water requirements? If yes, where will water be obtained?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Will the project have significant energy requirements?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Atmospheric Environment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Will the project generate emissions to the air from fuel combustion, production processes or other sources?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Will the project involve disposal of waste through burning in the open air (e.g. slash material and construction debris)?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Will the project give smell/odour emission?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aquatic &amp; Marine Environment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Will the project require disposal of large volumes of sewage or industrial effluent?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Options: Yes, No, ?
<table>
<thead>
<tr>
<th>Aquatic and Marine Environment</th>
<th>Details / Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Will the project require channel dredging, straightening or crossing of streams?</td>
<td></td>
</tr>
<tr>
<td>Will the project require the construction of piers or seawalls?</td>
<td></td>
</tr>
<tr>
<td>Will the project require the construction of offshore structures?</td>
<td></td>
</tr>
<tr>
<td>Waste Generation</td>
<td></td>
</tr>
<tr>
<td>Will the project generate overburden or mine process wastes?</td>
<td></td>
</tr>
<tr>
<td>Will the project generate domestic or industrial wastes?</td>
<td></td>
</tr>
<tr>
<td>Could the project contaminate soil or groundwater?</td>
<td></td>
</tr>
<tr>
<td>Noise</td>
<td></td>
</tr>
<tr>
<td>Will the project cause noise, vibration, light, heat or other radiation into the environment?</td>
<td></td>
</tr>
</tbody>
</table>

☐ Yes  ☐ No  ☐ ?

☐ Yes  ☐ No  ☐ ?

☐ Yes  ☐ No  ☐ ?

☐ Yes  ☐ No  ☐ ?

☐ Yes  ☐ No  ☐ ?

☐ Yes  ☐ No  ☐ ?

☐ Yes  ☐ No  ☐ ?

☐ Yes  ☐ No  ☐ ?

☐ Yes  ☐ No  ☐ ?

☐ Yes  ☐ No  ☐ ?
### Hazards

Will the project involve regular use of substances for pest or weed control?

- [ ] Yes
- [ ] No
- [ ] ?

### Social

Will project involve employment of large numbers of workers?

- [ ] Yes
- [ ] No
- [ ] ?

Will the project provide housing and other facilities for the workforce?

- [ ] Yes
- [ ] No
- [ ] ?

### Any other project information

- [ ] Yes
- [ ] No
- [ ] ?

### Details / Comments

- [ ] Yes
- [ ] No
- [ ] ?

- [ ] Yes
- [ ] No
- [ ] ?

- [ ] Yes
- [ ] No
- [ ] ?

- [ ] Yes
- [ ] No
- [ ] ?

- [ ] Yes
- [ ] No
- [ ] ?

- [ ] Yes
- [ ] No
- [ ] ?
### General characteristics

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
<th>?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is the project located in or near a game reserve?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is the project located in an area with unique landscape or scenery?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is the project located in an area with unique wildlife?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is the project located in an area with unique plant life?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are there any archaeological features nearby?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are there any national monuments nearby?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is the area already experiencing pollution or other environmental damage?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Will the project be located in or close to wetlands, rivers or any other waterbody (including groundwater)?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Details / Comments

<table>
<thead>
<tr>
<th>Details / Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>..................................................................................................................</td>
</tr>
<tr>
<td>..................................................................................................................</td>
</tr>
<tr>
<td>..................................................................................................................</td>
</tr>
<tr>
<td>..................................................................................................................</td>
</tr>
<tr>
<td>..................................................................................................................</td>
</tr>
<tr>
<td>..................................................................................................................</td>
</tr>
<tr>
<td>..................................................................................................................</td>
</tr>
<tr>
<td>..................................................................................................................</td>
</tr>
<tr>
<td>..................................................................................................................</td>
</tr>
<tr>
<td>..................................................................................................................</td>
</tr>
<tr>
<td>..................................................................................................................</td>
</tr>
<tr>
<td>..................................................................................................................</td>
</tr>
<tr>
<td>..................................................................................................................</td>
</tr>
<tr>
<td>..................................................................................................................</td>
</tr>
<tr>
<td>..................................................................................................................</td>
</tr>
</tbody>
</table>

---

---

---
### Aquatic Features
Will the project adversely affect the quality, flow or volume or surface or groundwater?

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>?</th>
</tr>
</thead>
</table>

### Visual Characteristics
Will the project be visible to the public?

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>?</th>
</tr>
</thead>
</table>

### Erosion
Is the project likely to cause soil erosion?

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>?</th>
</tr>
</thead>
</table>

### Ecology
Will the project result in loss or disturbance of valuable habitats or ecosystems?

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>?</th>
</tr>
</thead>
</table>

Will the project disturb wildlife migration, feeding or breeding?

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>?</th>
</tr>
</thead>
</table>

Will the project cause the introduction of alien (exotic) plants or animals (excluding livestock)?

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>?</th>
</tr>
</thead>
</table>

Will the project significantly increase the risk of veldfires?

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>?</th>
</tr>
</thead>
</table>

### Details / Comments

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
</table>

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
</table>

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
</table>

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
</table>

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
</table>

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
</table>

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
</table>

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
</table>

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
</table>

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
</table>

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
</table>

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
</table>

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
</table>

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
</table>

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Land Use</td>
<td>Details / Comments</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>--------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Will the project be located in a densely populated area or in the vicinity of residential property or other sensitive land uses (e.g. schools, hospitals, community facilities)?</td>
<td>□ Yes □ No □ ?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Will the project be located on land of high agricultural value?</td>
<td>□ Yes □ No □ ?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Will the project be located in an area of recreational/tourist importance?</td>
<td>□ Yes □ No □ ?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Land &amp; Property</td>
<td>□ Yes □ No □ ?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Will the project require any people to be moved or resettled?</td>
<td>□ Yes □ No □ ?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Will the project attract a large number of people into the area?</td>
<td>□ Yes □ No □ ?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Will the project result in demolition of structures or occupation of homes, gardens, businesses?</td>
<td>□ Yes □ No □ ?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Will the existing population be physically divided as a result of the project?</td>
<td>□ Yes □ No □ ?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Wider Consultation

<table>
<thead>
<tr>
<th>Has there been public concern about the project?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes □</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Will the project have an impact on the neighbouring country?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes □</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Has the public been consulted yet about the project?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes □</td>
</tr>
</tbody>
</table>

### Other environmental information

<table>
<thead>
<tr>
<th>Other environmental information</th>
</tr>
</thead>
<tbody>
<tr>
<td>..................................</td>
</tr>
<tr>
<td>..................................</td>
</tr>
<tr>
<td>..................................</td>
</tr>
<tr>
<td>..................................</td>
</tr>
<tr>
<td>..................................</td>
</tr>
<tr>
<td>..................................</td>
</tr>
</tbody>
</table>

### Details / Comments

<table>
<thead>
<tr>
<th>Details / Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>..........................</td>
</tr>
<tr>
<td>..........................</td>
</tr>
<tr>
<td>..........................</td>
</tr>
<tr>
<td>..........................</td>
</tr>
<tr>
<td>..........................</td>
</tr>
<tr>
<td>..........................</td>
</tr>
</tbody>
</table>

| Yes □ | No □ | ? □ |

| Yes □ | No □ | ? □ |

| Yes □ | No □ | ? □ |

| Yes □ | No □ | ? □ |
Declaration

I…………………………………………….. (name in full) understand the information that I have provided in this questionnaire will be used by the Ministry of Environment and Tourism to decide whether my project requires an EA or not. I also understand that any wrong information provided in this questionnaire will mislead the decision of the Ministry on my project. Should this be the case, I am well aware that the Ministry will hold me accountable for my wrong and misleading information. Therefore, I honestly declare that the information that I have provided in this questionnaire is to the best of my ability true and reliable.

Signature:……………………………… Date:………………………………………………
Implementation Tool 3

Generic EMP for Building Design, Construction, and Operation on Non-Sensitive Sites
A INSTRUCTIONS FOR EMP COMPLETION

B PRELIMINARIES

- Aims and scope of the EMP
- Structure of the EMP
- Applicable legislation
- Project background description
- Public participation
- Organisational structure and responsibilities for EMP implementation
- Monitoring and evaluation
- Useful contacts
- Glossary
- Acronyms

C EMP FOR BUILDING PLANNING AND DESIGN

- Objectives
- Environmental Key Performance Indicators
- Responsibilities
- Management objectives

D EMP FOR BUILDING CONSTRUCTION

- Objectives
- Environmental Key Performance Indicators
- Responsibilities
- Management objectives

E EMP FOR BUILDING OPERATIONS

- Objectives
- Environmental Key Performance Indicators
- Responsibilities
- Management objectives
**Part A. Instructions for EMP Completion**

This Generic Environmental Management Plan (EMP) for Building Design, Construction, and Operation on Non-Sensitive Sites creates a framework for the implementing agent of the project. This is not a finalized EMP! The Project Manager or his/her environmental manager, needs to complete this EMP with specific management plans for the individual building or facility.

Part B of this document sets out the preliminaries of the EMP. Some aspects have been completed, e.g., the section on legal requirements, but other sections will require input as shown.

Parts C, D, and E contain the environmental management objectives for building design, construction, and operation, respectively. These are merely management objectives and therefore they need to be expanded into a site-specific management plan, where relevant.

The management plan should be arranged in a table format with headings as shown in the example below.

<table>
<thead>
<tr>
<th>Management objective</th>
<th>Management action(s) to meet objective</th>
<th>Target or standard to be met</th>
<th>Indicator(s)</th>
<th>Responsibility</th>
<th>Frequency or due date for action</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

It is very important that the management actions must be:

- Practical
- Measurable
- Auditable

The implementation of EMPs will be monitored and evaluated by MCA and therefore it is essential that the specified management actions are realistic and do-able, otherwise the contractor will be given a non-compliant audit. For example, rather than stating that “there will be no erosion from the site,” which is unrealistic and difficult to measure, rather state that “all storm water will be routed to a catchment dam via earth diversion berms prior to discharge from the site.” The indicator in this case will be that the suspended sediment levels in the receiving water course do not exceed legislated limits—an objective and measurable indicator.

The actions and/or targets must also be auditable. For example, rather than stating that “disturbance will be kept to a minimum,” say “there will be no disturbance outside the demarcated areas.” This is a more objective measure that can be readily monitored and audited.
Part B. Preliminaries

Aims and Scope of the EMP

This EMP contains the practical measures that must be taken to ensure that potentially negative impacts on the environment (ecological and social) are minimized or completely avoided and that there is compliance with legal standards of project targets.

The EMP covers all aspects of the project life cycle, including: planning and design (where many negative impacts can be screened out); construction activities relating to all aspects of the project (whether erecting a building or constructing access roads, drilling of boreholes, etc.); and (where relevant) operational aspects of the building.

This EMP for the design, construction, and operation of buildings in non-sensitive environments should be used for the following MCA project activities:

- Construction of veterinary service centers;
- Construction or renovation of school buildings;
- Construction of teacher houses;
- Construction of offices in Etosha National Park
- Construction and operation of Community Skills Development Centres;
- Construction and operation of Regional Study and Resource Centres.

Structure of the EMP

This EMP is structured as follows:

- Background information, roles and responsibilities, legal requirements, and other administrative requirements are contained below in Part B: Preliminaries.
- For management objectives for design and planning, see Part C.
- For management objectives for construction, see Part D.
- For management objectives for operational aspects of the building, see Part E.

Applicable Legislation

In Namibia, Environmental Impact Assessments (EIAs) are guided, reviewed, and administered by the Environmental Commissioner (EC) located in the Directorate of Environmental Affairs (DEA) in the Ministry of Environment and Tourism (MET). The MET is to be assisted by a Sustainable Development Advisory Council (SDAC) that will inter alia promote cooperation between government and other stakeholders on environmental issues relating to sustainable development.

Before a developer can commence with an activity listed in Part VII of the Environmental Management Act (EMA) of 2007, s/he must obtain an Environmental Clearance Certificate from MET. Usually, authorization is only granted after an EIA has been completed and the EC is satisfied that the activity is environmentally acceptable (negative impacts can be avoided or mitigated satisfactorily). In many cases, the activity is benign and may not require a full EIA, but in others, an EIA is required. The list of

---

1 Neither the SDAC nor the EC had been established by the time this report was compiled. They are expected to be in place and operational by 2009.
2 Part VIII section 38
activities requiring an EIA in Part VII of the EMA is merely a guide as the Minister may amend this list and the EC may in any case decide that an activity requires an EIA based on the expected environmental impacts even if the activity is not listed (Part VIII section 32 (1) (b)). The EC will require the proponent to complete a Screening Checklist (see Livestock Implementation Tool 5), which s/he will use to help determine whether an EIA is required or not.

However, the Environmental Clearance Certificate issued after completion of an approved EIA is not blanket permission to implement the project. The proponent may still be required to obtain a sectoral licence/permit, depending on the nature of the envisaged project. For example, in the context of MCA activities, the following may be relevant:

- Water abstraction permit and a water discharge permit from the Department of Water Affairs (the latter for releasing wastewater into any aspect of the environment).
- Quarrying permit for sand and stone extraction (Ministry of Mines and Energy)
- Building permission from local authorities
- Livestock transportation
- Lease (if buildings are to be erected on unproclaimed state land)
- Import permit (e.g., if game or livestock are to be imported)

In most cases, sector ministries first consult the EIA report before considering the proponent’s applications for permits.

EIA reports are officially reviewed by the EC before an Environmental Clearance Certificate is issued. Usually, the EC will confer with the line ministry under whose jurisdiction the project is proposed (e.g., the Ministry of Agriculture, Water and Forestry). In some cases, the EIA report is subject to a public hearing and it may also be sent to an independent expert or panel for an external review, especially if the project is controversial or if the EIA is very technical. Article 45 of the Act entitles the EC to recover the costs of external review from the proponent. After reviewing the EIA report, the EC may:

- Grant the application and, on payment of the prescribed fee, issue an environmental clearance certificate to the proponent; or
- Refuse the application and provide the proponent with reasons for the refusal.

The EMA does not explicitly require the proponent to develop an EMP, but it is assumed that this is implied by the fact that the EC can prescribe conditions as part of the Environmental Clearance Certificate. Given that the certificate is valid for a maximum of three years, it stands that an EMP would need to be revised at least every three years. It is the norm in Namibia for EIAs to lead to the development of an outcomes-based EMP, which becomes the “implementation manual” for projects.

**Project Background Description**

*To be completed. Include at the very least the following information:*

- **Title of project**
- **Names of the proponent, architect, contractor(s), quantity surveyor, design engineer, building manager**
- **Project location (including a map)**
- **Brief motivation and description of the project**
Description of the construction activities including camp location, workforce, labour hiring policies, input materials, waste and emissions (solid, gaseous and liquid, hazardous and non-hazardous)

Timeframes for planning, design, approvals, construction and operation

Public Participation

The relevant, affected stakeholders in the towns and villages where the planned MCA construction projects will take place must be identified so that they can contribute to the details of the EMP. Communications must be maintained with these stakeholders particularly during project planning and construction.

Organizational Structure and Responsibilities for EMP Implementation

The life cycle of a project involves a number of key players who are responsible for environmental management at different stages of project development. The aims and objectives of each of these people will be very different, as will their approach to environmental management. The overall Project Manager must ensure that the environmental management objectives of each stage of the project life cycle are adhered to by each person responsible for that phase of development.

The EMP is thus a set of rules to which each and every person involved in the building/facility must adhere. These rules should be attached to the contract for the architect, builder, road contractor, building operator, etc. so that they each do their job without causing unnecessary harm to the environment.

To enable this, the rules for each responsible person have been written under separate headings, so that they can be pulled out of this document and attached to the respective contracts as an appendix.

Like all rules and contracts, the EMP must be implemented and compliance enforced in order for it to be effective.

Implementation is the responsibility of the person in charge of each of the following phases:

<table>
<thead>
<tr>
<th>Project phase</th>
<th>Project sub-phase</th>
<th>Responsible person(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Project Management</td>
<td>Environmental control</td>
<td>Project Manager/QS MCA Environmental Manager</td>
</tr>
<tr>
<td>Planning and Design</td>
<td>Building design</td>
<td>Architect</td>
</tr>
<tr>
<td></td>
<td>Engineering and service provision</td>
<td>Geotechnical Engineer Civil Engineer Structural Engineer Wet Services Electrical Engineer</td>
</tr>
<tr>
<td>Construction</td>
<td>Building construction</td>
<td>Main building contractor Architect</td>
</tr>
<tr>
<td></td>
<td>Road construction</td>
<td>As above or road contractor</td>
</tr>
<tr>
<td></td>
<td>Borehole drilling</td>
<td>Driller</td>
</tr>
<tr>
<td></td>
<td>Environmental management</td>
<td>Environmental Control Officer MCA audit team</td>
</tr>
<tr>
<td>Operation</td>
<td>—</td>
<td>Building Manager</td>
</tr>
</tbody>
</table>

The contractors might have subcontractors who help them with their work. In this case, the main contractor must make sure that subcontractors abide by the rules and requirements of the EMP. A system of incentives and penalties needs to be in place to ensure compliance.
Monitoring and Evaluation

As noted in the Strategic Environmental Management Plan (see Section 7 of the SEA Phase II Report), MCA Namibia is responsible for implementing the Compact’s monitoring and evaluation (M&E) plan. Actual monitoring will involve a variety of governmental, nongovernmental, and private sector institutions. This SEA recommends that the comprehensive M&E plan (which includes social and environmental monitoring) should be administered by an external entity. An external contract(s) for this work has the advantage of providing independent oversight and adding a measure of quality control and objective, third-party oversight both to spending and to implementation. Implementation of the M&E plan will require that the M&E team is adequately staffed, and that baseline data and information are collected that are adequate for future tracking and comparison. Indicators of success in this regard include a high rate of compliance with each EMP, application of appropriate social and environmental safeguards at every project site, and a high frequency of documented visits to the project sites.

Useful Contacts

To be completed. Provide contact details for the following persons:

- MCA Project Manager
- MCA Environmental manager
- Architect
- Quantity surveyor
- Main building contractor
- Site manager or foreman
- Civil engineer
- Electrical engineer
- Structural engineer
- Regional or municipal council: names of those responsible for building approvals, planning, sewerage, roads and stormwater, electricity, waste management etc
- MCA M&E team
- Local emergency services (fire, ambulance, police)

Glossary

To be completed. Provide a glossary of terms used in the EMP so that all levels of contractors can understand what is required.

Acronyms

To be completed.
Part C. EMP for Building Planning and Design

INSTRUCTIONS FOR THE ARCHITECT AND DESIGN ENGINEERS

Location and Design

Objective: The building must fit into the natural environment, making full use of the advantages of the site and adding to the “sense of place.”

Environmental performance indicator: The buildings all conform to the principles of green building design to optimize energy, water use, and recycling.

Who is responsible?

✓ As a first step, the responsible ministry must include these “style” and “taste” issues into the brief for the architect, and ensure that the design and specifications are evaluated against these aesthetic and design values;
✓ The architect must appreciate the need for sensitivity with regards to sense of place, and s/he must design accordingly; and
✓ The plans must be approved (in writing) by the Project Manager and the responsible ministry before the building may be built.

<table>
<thead>
<tr>
<th>Environmental management principles to be applied during planning and design</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Planning principles</strong></td>
</tr>
<tr>
<td>1. Locate new buildings in areas consistent with local zoning plans.</td>
</tr>
<tr>
<td>2. Locate new buildings away from flood plains and water courses.</td>
</tr>
<tr>
<td>3. Avoid the need for resettlement.</td>
</tr>
<tr>
<td>4. Acquire land on a willing buyer:willing seller basis.</td>
</tr>
<tr>
<td>5. Avoid areas currently used as public open space or for grazing or other communal activities.</td>
</tr>
<tr>
<td><strong>Aesthetic issues</strong></td>
</tr>
<tr>
<td>1. Buildings must be aesthetically pleasing.</td>
</tr>
<tr>
<td>2. Use colors that are sympathetic with the environment.</td>
</tr>
<tr>
<td>3. In cases where non-water flush toilets will be installed, use VIPs.</td>
</tr>
<tr>
<td><strong>Water efficiency</strong></td>
</tr>
<tr>
<td>4. Do not specify any lawns (they use too much water).</td>
</tr>
<tr>
<td>5. Landscape using indigenous plants, paving, and rock features.</td>
</tr>
<tr>
<td>6. Collect all rainwater from roofs in rainwater tanks and use in vegetable gardens.</td>
</tr>
<tr>
<td>7. Where flush toilets are to be installed, ensure that all toilets are of the dual flush type.</td>
</tr>
<tr>
<td>8. Where flush toilets are not connected to the municipal sewerage system, ensure that they drain into a properly designed, two-chamber septic tank that is located at least 20 metres from any building.</td>
</tr>
<tr>
<td>9. Gray water (from showers and basins) may drain into a soak away area, which could be developed as</td>
</tr>
</tbody>
</table>
Environmental management principles to be applied during planning and design

- a reed-bed or alternatively could be used to irrigate vegetable gardens.

10. Specify low-flow shower-heads for the showers, where applicable.
11. Provide only showers in houses, not baths.
12. Specify automatic turn-off taps in all public ablution facilities.

**Energy efficiency**

13. Design all buildings so that there is as much cross-ventilation as possible, making maximum use of cooling and breezes and ensure that west-facing windows are as small as possible and are in as much shade as possible (to minimize heat absorption in the afternoon).
14. Apply heat reflecting paint to all roofs.
15. Design a system where as much solar energy can be used as possible (e.g., water heating and lights), though it is accepted that grid power or a diesel generator will be necessary to power some of the equipment (e.g., refrigerators, computers, etc.). Ideally, grid electricity or the generator should be used as little as possible.
16. Liaise with the water driller to determine whether the borehole (if applicable) will require a diesel generator, or if a solar panel will be used.

**Pest control**

17. Specify fly-screens on openable windows, so that there is less need to use insect repellents.
18. Design scavenger-proof storage and disposable areas for food and waste.
**Part D. EMP for Building Construction**

**INSTRUCTIONS FOR THE BUILDING CONTRACTOR**

**Objective:** To construct the buildings and facilities with minimal disturbance to the surrounding natural environment.

**Environmental performance indicator:** The “environmental footprint” of the building or facility is limited to the construction site itself.

**Who is responsible?**

- The building contractor must be instructed in writing by the Project Manager to implement the mitigation measures. It is then his responsibility to ensure that ALL the measures are implemented.
- The Project Manager and the architect must inspect the site at least once per month to make sure that the measures are being implemented.
- The MCA M&E team will inspect the site at least every quarter to ensure that the EMP is being implemented.
- The Project Manager must do a final inspection once the lodge is built and issue the building contractor with a completion letter once s/he is satisfied that the job has been done in accordance with this EMP.
- The final payment (10%) will only be made after the completion letter has been issued.

<table>
<thead>
<tr>
<th>Environmental management objectives to be applied during construction</th>
</tr>
</thead>
</table>

**Site preparation**

1. The contractor must demarcate the construction area with metal droppers and hazard tape so that there is NO confusion about which areas may be disturbed by the development and which areas will be strictly off-limits.

**Sourcing of building materials**

1. All materials (e.g., bricks, sand, cement, poles, roofing, and thatch) must be brought into the site from outside.
2. In the case of items (e.g., poles) that are not bought from a registered shop, the contractor will ensure that the harvesting of these materials did not cause serious impacts at the place from which they came.
3. Building sand must be collected from an existing registered borrow pit if possible, or from an area that is approved for sand extraction.
4. Building stone must be obtained from an existing registered quarry or supplier.

**Clearing of land**

1. The only land that may be cleared is the access road, the area upon which buildings will be erected, parking bays, driveways, and pathways.
2. As much land clearing as possible (e.g., the removal of stones and rocks) will be done by hand.
3. Remove all woody vegetation and make provision for this to be used for firewood or other uses by
### Environmental management objectives to be applied during construction

<table>
<thead>
<tr>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Demarcate trees which must not be damaged by construction activities.</td>
</tr>
<tr>
<td>2. Remove all topsoil and stockpile for future use in rehabilitation.</td>
</tr>
<tr>
<td>3. As far as possible, all “work areas,” such as the areas where bricks, sand, cement, poles, and stones are stockpiled, should be areas that will later be used for parking, building, or driveways. In other words, do not stockpile materials in the natural veldt. The same applies to the area where cement is mixed.</td>
</tr>
</tbody>
</table>

### Facilities for workers

<table>
<thead>
<tr>
<th>Facility</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. All workers will be housed in on-site tents or caravans or in an area identified by the local authorities.</td>
</tr>
<tr>
<td>2. Wherever the workers are housed, they must be provided with water, proper toilets, and washing facilities.</td>
</tr>
<tr>
<td>3. Portable chemical toilets must be established on site.</td>
</tr>
<tr>
<td>4. Cooking must be done on gas or open fires. If open fires are used, these must be made in a designated spot so that there is no possibility for a veldt fire occurring.</td>
</tr>
<tr>
<td>5. No wood may be collected on site except that cleared during site clearance — additional firewood must be brought in from outside.</td>
</tr>
</tbody>
</table>

### Management of waste (and minimization of pollution)

<table>
<thead>
<tr>
<th>Waste Management Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. For human waste, see above.</td>
</tr>
<tr>
<td>2. All combustible waste must be burned in a drum (e.g., empty cement bags), with the necessary care taken to avoid the possibility of starting a veldt fire.</td>
</tr>
<tr>
<td>3. All non-combustible waste must be removed from site at least once a week to a registered landfill.</td>
</tr>
<tr>
<td>4. Any waste that is stored temporarily at the site must be secured in refuse bags or sealable bins to avoid it being blown into the veldt.</td>
</tr>
<tr>
<td>5. Loose litter must be collected on a daily basis.</td>
</tr>
<tr>
<td>6. Measures must be taken to prevent waste attracting scavengers (e.g., jackals).</td>
</tr>
<tr>
<td>7. No paint, solvents, thinners, diesel, oil, or any other harmful substances may be poured onto the ground or into a water course. They must be collected in a container and removed from site for proper disposal.</td>
</tr>
<tr>
<td>8. Workers should be given regular talks on aspects such as waste management.</td>
</tr>
<tr>
<td>9. A system of incentives or penalties must be implemented to ensure compliance with all waste management requirements.</td>
</tr>
</tbody>
</table>

### Use of water during construction

<table>
<thead>
<tr>
<th>Water Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Although water is needed for many aspects of construction, it must be used sparingly at all times.</td>
</tr>
<tr>
<td>2. All taps, pipes and tanks must be managed and maintained so that they do not leak.</td>
</tr>
<tr>
<td>3. Workers should be given regular talks on aspects such as water conservation and management.</td>
</tr>
<tr>
<td>4. A system of incentives or penalties must be implemented to ensure compliance with all water use.</td>
</tr>
</tbody>
</table>
### Environmental management objectives to be applied during construction

<table>
<thead>
<tr>
<th>conservation requirements.</th>
</tr>
</thead>
</table>

#### Protection of wildlife

1. No wild animals may be trapped or killed for any reason whatsoever.

#### Transport and storage of fuel and other materials

- All vehicles that transport materials to and from the site must be roadworthy.
- Drivers that transport the above materials must have a valid drivers licence and must adhere to all traffic rules.
- Loads upon vehicles must be properly secured to completely avoid items falling off the vehicle at any time.
- All materials (e.g., cement, bricks, poles, stones, and pipes) must be stored at a central storage area on site so that the site is neat and orderly, and to avoid a situation where materials are lying about.
- All fuels, paints, solvents, and other chemicals must be stored in the legally-required manner, ensuring that they cannot react with each other or be spilt onto the ground.

#### Servicing of vehicles and other equipment

1. If vehicles or other equipment are serviced or repaired on-site, any grease, oil, etc. must be collected in a container and removed for proper disposal (see waste management section for details).

#### Health and safety

1. Only conduct construction work within normal working hours and not on weekends. Liaise closely with school principals to ensure that noisy work does not occur during sensitive times e.g., assemblies or exams.
2. Investigate the use of construction vehicles without reversing beepers, e.g., to minimize disturbance at schools. Rather, use flagmen and flashing lights in hazardous situations.
3. Conduct regular HIV/AIDS awareness and prevention training (as per MCA support program).
4. All workers are to use Personal Protective Equipment (PPE) at all times.
5. Adhere to speed limits on access roads at all times.
6. Maintain first aid kit at all construction sites, including snake bite anti-venom and bee sting antihistamines.

#### Rehabilitation

1. On completion of construction, all disturbed areas are to be cleaned of all building rubble, industrial waste, contaminated soil, etc. This waste is NOT to be buried but must be removed from site to a registered landfill.
2. All compacted areas are to be ripped where revegetation is contemplated.
3. All disturbed areas which are to be revegetated are to be contoured and covered with saved topsoil.
4. Plant only indigenous, water-wise plants and landscape with organic or rock “mulch.”
Implementation Tool 4

Generic EMP for Building Design, Construction, and Operation on Sensitive Sites
A INSTRUCTIONS FOR EMP COMPLETION

B PRELIMINARIES

Aims and scope of the EMP
Structure of the EMP
Applicable legislation
Project background description
Public participation
Organizational structure and responsibilities for EMP implementation
Monitoring and evaluation
Useful contacts
Glossary
Acronyms

C EMP FOR BUILDING PLANNING AND DESIGN
Objectives
Environmental Key Performance Indicators
Responsibilities
Management objectives

D EMP FOR BUILDING CONSTRUCTION
Objectives
Environmental Key Performance Indicators
Responsibilities
Management objectives

E EMP FOR LODGE OPERATIONS
Objectives
Environmental Key Performance Indicators
Responsibilities
Management objectives
Part A. INSTRUCTIONS for EMP Completion

This Generic Environmental Management Plan (EMP) for Building Design, Construction and Operation on Sensitive Sites creates a framework for the implementing agent of the project. This is not a finalized EMP! The Project Manager or his/her environmental manager needs to complete this EMP with specific management plans for the individual building or facility.

Part B of this document sets out the preliminaries of the EMP. Some aspects have been completed e.g., the section on legal requirements, but other sections will require input as shown.

Parts C, D, and E contain the environmental management objectives for building design, construction and operation respectively. It should be noted that these are merely management objectives and therefore they need to be expanded into a site-specific management plan, where relevant.

The management plan should be arranged in a table format with headings as shown in the example below.

<table>
<thead>
<tr>
<th>Management objective</th>
<th>Management action(s) to meet objective</th>
<th>Target or standard to be met</th>
<th>Indicator(s)</th>
<th>Responsibility</th>
<th>Frequency or due date for action</th>
</tr>
</thead>
</table>

It is very important that the management actions be:

- Practical
- Measurable
- Auditable

The implementation of these EMPs will be monitored and evaluated by MCA and therefore it is essential that the specified management actions are realistic and do-able, otherwise the contractor will be given a non-compliant audit. For example, rather than stating that “there will be no erosion from the site,” which is unrealistic and difficult to measure, state that “all storm water will be routed to a catchment dam via earth diversion berms prior to discharge from the site.” The indicator in this case will be that the suspended sediment levels in the receiving water course do not exceed legislated limits—an objective and measurable indicator.

The actions and/or targets must be auditable. For example, rather than stating that “disturbance will be kept to a minimum,” say “there will be no disturbance outside the demarcated areas.” This is a more objective measure that can be readily monitored and audited.
Part B. Preliminaries

Aims and Scope of the EMP

This EMP contains the practical measures that must be taken to ensure that potentially negative impacts upon the environment (ecological and social) are minimized or completely avoided and that there is compliance with legal standards of project targets. It is likely that in the case of building in sensitive environments, an EIA will have been completed for the project prior to preparation of the EMP. The EIA will have identified the key issues to be addressed in the EMP and therefore this generic EMP serves as a guideline.

The EMP covers all aspects of the project life cycle, including: planning and design (where many negative impacts can be screened out); construction activities relating to all aspects of the project (whether erecting a building or constructing access roads, drilling of boreholes, etc.); and (where relevant) operational aspects of the building.

This EMP for the design, construction, and operation of buildings in sensitive environments should be used for the following MCA project activities:

- Construction and operation of 15 lodges in sensitive areas within conservancies; and
- Construction and operation of two new staff villages in Etosha National Park.

Structure of the EMP

This EMP is structured as follows:

- Background information, roles and responsibilities, legal requirements, and other administrative requirements are contained below in Part B: Preliminaries.
- For management objectives for design and planning, see Part C.
- For management objectives for construction, see Part D.
- For management objectives for operational aspects of the building, see Part E.

Applicable Legislation

In Namibia, Environmental Impact Assessments (EIAs) are guided, reviewed and administered by the Environmental Commissioner (EC) located in the Directorate of Environmental Affairs (DEA) in the Ministry of Environment and Tourism (MET).1 The MET is to be assisted by a Sustainable Development Advisory Council (SDAC) that will inter alia promote co-operation between government and other stakeholders on environmental issues relating to sustainable development.

Before a developer can commence with an activity listed in Part VII of the Environmental Management Act (EMA) of 2007, s/he must obtain an Environmental Clearance Certificate from MET.2 Usually, authorization is only granted after an EIA has been completed and the EC is satisfied that the activity is environmentally acceptable (negative impacts can be avoided or mitigated satisfactorily). In many cases, the activity is benign and may not require a full EIA, but in others, an EIA is required. The list of activities requiring an EIA in Part VII of the EMA is merely a guide as the Minister may amend this list and the EC may in any case decide that an activity requires an EIA based on the expected environmental

---

1 Neither the SDAC nor the EC had been established by the time this report was compiled. They are expected to be in place and operational by 2009.
2 Part VIII Section 38.
impacts even if the activity is not listed (Part VIII section 32 (1) (b)). The EC will require the proponent to complete a Screening Checklist (see Livestock Implementation Tool 5), which s/he will use to help determine whether an EIA is required or not.

However, the Environmental Clearance Certificate issued after completion of an approved EIA is not blanket permission to implement the project. The proponent may still be required to obtain a sectoral licence/permit, depending on the nature of the envisaged project. For example, in the context of MCA activities, the following may be relevant:

- Water abstraction permit and a water discharge permit from the Department of Water Affairs (the latter for releasing wastewater into any aspect of the environment).
- Quarrying permit for sand and stone extraction (Ministry of Mines and Energy)
- Building permission from local authorities
- Livestock transportation
- Lease (if buildings are to be erected on unproclaimed state land)
- Import permit (e.g., if game or livestock are to be imported)

In most cases, sector ministries first consult the EIA report before considering the proponent’s applications for permits.

EIA reports are officially reviewed by the EC before an Environmental Clearance Certificate is issued. Usually, the EC will confer with the line ministry under whose jurisdiction the project is proposed (e.g., the Ministry of Agriculture, Water and Forestry). In some cases, the EIA report is subject to a public hearing and it may also be sent to an independent expert or panel for an external review, especially if the project is controversial or if the EIA is very technical. Article 45 of the Act entitles the EC to recover the costs of external review from the proponent. After reviewing the EIA report, the EC may:

- Grant the application and, on payment of the prescribed fee, issue an environmental clearance certificate to the proponent; or
- Refuse the application and provide the proponent with reasons for the refusal.

The EMA does not explicitly require the proponent to develop an EMP, but it is assumed that this is implied by the fact that the EC can prescribe conditions as part of the Environmental Clearance Certificate. Given that the certificate is valid for a maximum of three years, it stands that an EMP would need to be revised at least every three years. It is the norm in Namibia for EIAs to lead to the development of an outcomes-based EMP, which becomes the “implementation manual” for projects.

**Project Background Description**

*To be completed. Include at the very least the following information:*

- Title of project
- Names of the proponent, architect, quantity surveyor, design engineer, contractor(s), building manager
- Project location (including a map)
- Brief motivation and description of the project
- Description of the construction activities including camp location, workforce, labor hiring policies, input materials, waste and emissions (solid, gaseous and liquid, hazardous and non-hazardous)
Timeframes for planning, design, approvals, construction and operation

Public Participation

A public participation program will have been conducted as part of the EIA for these construction projects in sensitive areas. Consultation should continue with the main affected stakeholders through the project implementation stages (planning, design, construction, and operation). This is to ensure that stakeholders have input to the details of the EMP and are kept aware of other aspects of the project.

Organizational Structure and Responsibilities for EMP Implementation

The life cycle of a project involves a number of key players who are responsible for environmental management at different stages of project development. The aims and objectives of each of these people will be very different, as will their approach to environmental management. The overall Project Manager must ensure that the environmental management objectives of each stage of the project life cycle are adhered to by each person responsible for that phase of development.

The EMP is thus a set of rules to which each and every person involved in the building/facility must adhere. These rules should be attached to the contract for the architect, builder, road contractor, building operator, etc. so that they each do their job without causing unnecessary harm to the environment.

To enable this, the rules for each responsible person have been written under separate headings, so that they can be pulled out of this document and attached to the respective contracts as an appendix.

Like all rules and contracts, the EMP must be implemented and compliance enforced in order for it to be effective.

Implementation is the responsibility of the person in charge of each of the following phases:

<table>
<thead>
<tr>
<th>Project phase</th>
<th>Project sub-phase</th>
<th>Responsible person(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Project Management</td>
<td>Environmental control</td>
<td>Project Manager/QS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MCA Environmental Manager</td>
</tr>
<tr>
<td>Planning and Design</td>
<td>Building design</td>
<td>Architect</td>
</tr>
<tr>
<td></td>
<td>Engineering and service provision</td>
<td>Geotechnical engineer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Civil Engineer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Structural Engineer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wet Services</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Electrical Engineer</td>
</tr>
<tr>
<td>Construction</td>
<td>Building construction</td>
<td>Main building contractor</td>
</tr>
<tr>
<td></td>
<td>Road construction</td>
<td>As above or road contractor</td>
</tr>
<tr>
<td></td>
<td>Borehole drilling</td>
<td>Driller</td>
</tr>
<tr>
<td></td>
<td>Environmental management</td>
<td>Environmental Control Officer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MCA M&amp;E team</td>
</tr>
<tr>
<td>Operation</td>
<td>—</td>
<td>Building Manager</td>
</tr>
</tbody>
</table>

The contractors might have subcontractors who help them with their work. In this case, the main contractor must make sure that subcontractors abide by the rules and requirements of the EMP. A system of incentives and penalties needs to be in place to ensure compliance.
Monitoring and Evaluation

As noted in the Strategic Environmental Management Plan (see Section 7 of the SEA Phase II Report), MCA Namibia is responsible for implementing the Compact’s monitoring and evaluation (M&E) plan. Actual monitoring will involve a variety of governmental, nongovernmental, and private sector institutions. The SEA team recommends that the comprehensive M&E plan (which includes social and environmental monitoring) should be administered by an external entity. An external contract(s) for this work has the advantage of providing independent oversight and adding a measure of quality control and objective, third-party oversight both to spending and to implementation. Implementation of the M&E plan will require that the M&E team be adequately staffed, and that baseline data and information are collected that are adequate for future tracking and comparison. Indicators of success in this regard include a high rate of compliance with each EMP, application of appropriate social and environmental safeguards at every project site, and a high frequency of documented visits to the project sites.

Useful Contacts

To be completed. Provide contact details for the following persons:

- MCA Project manager
- MCA Environmental manager
- Architect
- Quantity surveyor
- Main building contractor
- Site manager or foreman
- Civil engineer
- Electrical engineer
- Structural engineer
- Regional or municipal council: names of those responsible for building approvals, planning, sewerage, roads and stormwater, electricity, waste management etc
- MCA M&E team
- Local emergency services (fire, ambulance, police)

Glossary

To be completed. Provide a glossary of terms used in the EMP so that all levels of contractors can understand what is required.

Acronyms

To be completed.
Part C. EMP for Building Planning and Design

INSTRUCTIONS FOR THE ARCHITECT AND DESIGN ENGINEERS

Objective: The building must fit into the natural environment, making full use of the advantages of the site and adding to the “sense of place.”

Environmental performance indicators:
- The buildings all conform to the principles of green building design to optimise energy, water use, and recycling.
- In the case of a lodge, guests visit the region repeatedly, and include the “attractiveness of the lodge/region” as one of their top 3 reasons for returning.

Who is responsible?
- As a first step, the responsible ministry must include these “style” and “taste” issues into the brief for the architect, and ensure that the design and specifications are evaluated against these aesthetic and design values.
- The architect must appreciate the need for sensitivity with regards to sense of place, and s/he must design accordingly.
- The plans must be approved (in writing) by the Project Manager and the responsible ministry before the building may be built.

<table>
<thead>
<tr>
<th>Environmental management objectives for building planning and design in sensitive areas</th>
<th>Aesthetic issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Lodges must be aesthetically pleasing, of a style that presents an “African” feel.</td>
<td>1. Use natural materials as much as possible, especially rocks from the area, and in the case of lodges, poles and thatch.</td>
</tr>
<tr>
<td>2. Use shapes that do not contrast too much with the surroundings and orientate roof pitches so that they are in parallel with rather than at 90° to the horizon.</td>
<td>2. Use colours that are sympathetic with the environment.</td>
</tr>
<tr>
<td>3. Use colours that are sympathetic with the environment.</td>
<td>3. Place aerials, solar panels, water tanks and other prominent features at a spot that makes them invisible from the access roads and other tourist viewing areas.</td>
</tr>
<tr>
<td>4. Use natural materials as much as possible, especially rocks from the area, and in the case of lodges, poles and thatch.</td>
<td>4. Where possible, hide installations such as water tanks amongst rocks or trees, or construct a rock or rough pole screen around tanks so that they are not too visible.</td>
</tr>
<tr>
<td>5. If corrugated iron is used for the roof, paint it an earthy colour.</td>
<td>5. Specify finishes in the lodges (e.g., lights, sanitary fittings, towel railings, etc.) that are unobtrusive and as rustic as possible.</td>
</tr>
<tr>
<td>6. Place aerials, solar panels, water tanks and other prominent features at a spot that makes them invisible from the access roads and other tourist viewing areas.</td>
<td>6. Avoid tiles on the floors – a treated concrete floor has a more “earthy” look and feel, and is cheaper and lower maintenance.</td>
</tr>
<tr>
<td>7. Where possible, hide installations such as water tanks amongst rocks or trees, or construct a rock or rough pole screen around tanks so that they are not too visible.</td>
<td>7. Specify signs that are not too intrusive, both at the entrance to the lodge, and even within the lodge. For example, a “parking” sign could be painted on stone and hung between poles, rather than made</td>
</tr>
</tbody>
</table>
### Environmental management objectives for building planning and design in sensitive areas

<table>
<thead>
<tr>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>11. Avoid neon signs and anything “flashy” – the more rustic, the better.</td>
</tr>
<tr>
<td>12. Lighting along the walkways to the chalets should be as modest as possible.</td>
</tr>
<tr>
<td>13. Walkways must be earth paths, demarcated simply by rocks along the edges.</td>
</tr>
<tr>
<td>14. Walkways must not be straight, but rather winding, taking care to go around major obstacles (e.g., trees).</td>
</tr>
<tr>
<td>15. Do not place lights so that they light up trees or rocks.</td>
</tr>
<tr>
<td>16. Apply a charcoal finish to the pool at lodges– avoid a blue or light finish and avoid excessive lighting in the pool.</td>
</tr>
<tr>
<td>17. Avoid too much clutter in the décor of lodges – a minimalist approach is more appropriate.</td>
</tr>
<tr>
<td>18. Avoid razor wire, security fences and burglar bars as much as possible.</td>
</tr>
<tr>
<td>19. Minimize the use of shade cloth – rather use reeds or poles (shade cloth becomes shabby after a short while).</td>
</tr>
<tr>
<td>20. Specify that all services (e.g., pipes and cables) are to be buried underground.</td>
</tr>
<tr>
<td>21. Place service areas (e.g., parking, storage, clothes drying) out of sight of tourists.</td>
</tr>
<tr>
<td>22. Locate chalets as far as possible from each other, so that there is maximum privacy (at least 15 metres apart).</td>
</tr>
</tbody>
</table>

### Water efficiency

<table>
<thead>
<tr>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>23. Do not specify any lawns or cultivated gardens (they use too much water). Rather replant indigenous trees and plants and landscape with rock and stones.</td>
</tr>
<tr>
<td>24. Ensure that all toilets are of the flush type, and that they all drain into a properly designed, two-chamber septic tank that is located at least 20 metres from any building.</td>
</tr>
<tr>
<td>25. Grey water (from showers and basins) may drain into a soak away area, which could be developed as a reed-bed.</td>
</tr>
<tr>
<td>26. Specify showers only in the chalets and staff houses (no baths) in order to save as much water as possible.</td>
</tr>
<tr>
<td>27. Specify low-flow shower-heads for the showers.</td>
</tr>
<tr>
<td>28. Specify appropriate flushing devices in the toilets, so that flushing stops as soon as pressure on the handle is released or adopt dual flush systems.</td>
</tr>
</tbody>
</table>

### Energy efficiency

<table>
<thead>
<tr>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>29. Design all buildings so that there is as much cross-ventilation as possible, making maximum use of cooling breezes (west and south west) and ensure that west facing windows are as small as possible and west facing walls are in as much shade as possible (to minimize heat absorption in the afternoon).</td>
</tr>
<tr>
<td>30. Design a system where as much solar can be used as possible (e.g., water heating and lights), though it is accepted that a diesel generator will be necessary to power some of the equipment (e.g., refrigerators, computers, etc.). Ideally, the generator should be used as little as possible.</td>
</tr>
</tbody>
</table>
Environmental management objectives for building planning and design in sensitive areas

31. Liaise with the water driller to determine whether the borehole will require a diesel generator, or if a solar panel will be used. If diesel will be used, then it might be possible to use the same generator for pumping water and for powering the lodge.

Pest control

32. Specify fly-screens on open-able windows in the chalets, lodge area, kitchen area etc., so that there is less need to use insect repellents.

33. Design scavenger-proof storage areas for food and waste.
# Part D. EMP for Building Construction

## INSTRUCTIONS FOR THE BUILDING CONTRACTOR

**Objective:** To construct the buildings and facilities with minimal disturbance to the surrounding natural environment.

**Environmental performance indicator:** The “environmental footprint” of the building or facility is limited to the construction site itself.

**Who is responsible?**

- The building contractor must be instructed in writing by the Project Manager to implement the mitigation measures. It is then his responsibility to ensure that ALL the measures are implemented.
- The Project Manager and the architect must inspect the site at least once per month to make sure that the measures are being implemented.
- The MCA M&E team will inspect the site at least every quarter to ensure that the EMP is being implemented.
- The Project Manager must do a final inspection once the lodge is built and issue the building contractor with a completion letter once s/he is satisfied that the job has been done in accordance with this EMP.
- The final payment (10%) will only be made after the completion letter has been issued.

### Environmental Management Objectives to be applied during construction

<table>
<thead>
<tr>
<th>Site preparation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. The building contractor must lay-out the entire lodge before any workers, equipment or building materials are brought in. This means that the corners of every building, walkway, driveway, parking area, water installation, power generator, etc. must be clearly marked (with whitewash on the ground) on day 1.</td>
</tr>
<tr>
<td>3. The marked out area must be inspected and approved by the architect before anything more is done.</td>
</tr>
<tr>
<td>4. Thereafter, the contractor must further demarcate the area with metal droppers and hazard tape so that there is NO confusion about which areas may be disturbed by the development and which areas will be strictly off-limits.</td>
</tr>
<tr>
<td>5. In the case of the staff village, demarcate the construction area with hazard tape.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sourcing of building materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. All materials (e.g., bricks, sand, cement, poles, roofing, thatch, etc.) must be brought into the site from outside.</td>
</tr>
<tr>
<td>6. In the case of items (e.g., poles) that are not bought from a registered shop the contractor will ensure that the harvesting of these materials did not cause serious impacts at the place from which they came.</td>
</tr>
<tr>
<td>7. Building sand must be collected from an existing registered borrow pit.</td>
</tr>
</tbody>
</table>
Environmental Management Objectives to be applied during construction

8. Building stone must be obtained from an existing registered quarry. If none are available within a reasonable distance, stone must be obtained only from the source identified in the EIA.

9. Rocks that will be used for cladding may be collected from the lodge site.

Clearing of land

7. The only land that may be cleared is the access road, the area upon which buildings will be erected, parking bays, driveways and pathways.

8. As much land clearing as possible (e.g., the removal of stones and rocks) will be done by hand.

9. Trans-locate any species identified in the EIA to a temporary nursery for future use in rehabilitation.

10. Demarcate trees which must not be damaged by construction activities.

11. Remove all topsoil and stockpile for future use in rehabilitation.

12. As far as possible, all “work areas”, such as the areas where bricks, sand, cement, poles, stones etc. are stockpiled, should be areas that will later be used for parking, building, or driveways. In other words, do not stockpile materials in the natural veldt. The same applies to the area where cement is mixed.

13. The builder may only disturb an area of up to 2 metres around each building site or development area (e.g., the main lodge, chalets, staff quarters, driveway, parking area). This is enough space to move around with wheel barrows, scaffolding and other equipment. As noted earlier, this “footprint” area must be demarcated from day 1, with metal droppers and hazard tape so that everyone on site knows exactly which areas are off-limits.

Facilities for workers

6. All workers will be housed in tents or caravans. The first choice option is that the “workers village” be established on a nearby farm, but the village may be established on site.

7. Wherever the workers are housed, they must be provided with water, proper toilets and washing facilities.

8. Toilets must be established on site, preferably a flush toilet mounted over a septic tank, or a dry toilet system (similar to the units used during road construction projects).

9. Cooking must be done on gas or open fires. If open fires are used, these must be made in a designated spot so that there is no possibility for a veldt fire occurring.

10. No wood may be collected on site – wood must be brought in from outside.

Management of waste (and minimization of pollution)

10. For human waste – see above.

11. All combustible waste must be burnt in a drum (e.g., empty cement bags), with the
## Environmental Management Objectives to be applied during construction

12. All non-combustible waste must be removed from site at least once a week to a registered landfill.

13. Any waste that is stored temporarily at the site must be secured in refuse bags or sealable bins to avoid it being blown into the veldt.

14. Loose litter must be collected on a daily basis.

15. Measures must be taken to prevent waste attracting scavengers (e.g., jackals).

16. No paint, solvents, thinners, diesel, oil or any other harmful substances may be poured onto the ground or into a water course. They must be collected in a container and removed from site for proper disposal.

17. Workers should be given regular talks on aspects such as waste management.

18. A system of incentives or penalties must be implemented to ensure compliance with all waste management requirements.

## Use of water during construction

5. Although water is needed for many aspects of construction, it must be used sparingly at all times.

6. All taps, pipes and tanks must be managed and maintained so that they do not leak.

7. Workers should be given regular talks on aspects such as water conservation and management.

8. A system of incentives or penalties must be implemented to ensure compliance with all water conservation requirements.

## Protection of wildlife

2. No wild animals may be trapped or killed for any reason whatsoever.

## Transport and storage of fuel and other materials

11. All vehicles that transport materials to and from the site must be roadworthy.

12. Drivers that transport the above materials must have a valid drivers licence and must adhere to all traffic rules.

13. Loads upon vehicles must be properly secured to completely avoid items falling off the vehicle at any time.

14. All materials (e.g., cement, bricks, poles, stones, pipes, etc.) must be stored at a central storage area on site so that the site is neat and orderly, and to avoid a situation where materials are lying about all over the place.

15. All fuels, paints, solvents and other chemicals must be stored in the legally-required manner, ensuring that they cannot react with each other or be spilt onto the ground.

## Servicing of vehicles and other equipment

2. If vehicles or other equipment are serviced or repaired on-site, any grease, oil etc. must
**Environmental Management Objectives to be applied during construction**

<table>
<thead>
<tr>
<th>Objective</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>be collected in a container and removed from the site for proper disposal (see waste management section for details).</td>
</tr>
</tbody>
</table>

**Health and safety**

7. Only conduct construction work within normal working hours and not on weekends.
8. Investigate the use of construction vehicles without reversing beepers. Rather use flagmen and flashing lights in hazardous situations.
9. Conduct regular HIV/AIDS awareness and prevention training (as per MCC/A support programme).
10. All workers to use Personal Protective Equipment (PPE) at all times.
11. Adhere to speed limits on access roads at all times.
12. Maintain First Aid kit at all construction sites, including snake bite anti-venom and bee sting antihistamines.

**Rehabilitation**

5. On completion of construction, all disturbed areas are to be cleaned of all building rubble, industrial waste, contaminated soil etc. This waste is NOT to be buried but must be removed from site to a registered landfill.
6. All compacted areas are to be ripped where revegetation is contemplated.
7. All disturbed areas which are to be revegetated are to be contoured and covered with saved topsoil.
8. Plant only indigenous, ‘water-wise’ plants and landscape with organic or rock ‘mulch’.
Instructions for the Road Builder in Sensitive Areas

Objective:
The road must provide safe access to the lodge and/or staff village but must not be a scar on the landscape.

Environmental performance indicators:
- There are no complaints from visitors or passers-by that the access road has compromised “sense of place”.
- The access road does not cause erosion.

Who is responsible?
- The road building contractor must be instructed in writing by the developer to implement the mitigation measures. It is then his responsibility to ensure that ALL the measures are implemented.
- The Project Manager must inspect the site at least twice to make sure that the measures are being implemented.
- The Project Manager must do a final inspection once the road is built and issue the road contractor with a completion letter once s/he is satisfied that the job has been done in accordance with this EMP. A copy of the letter must be sent to DEA.
- The final payment (10%) will only be made after the completion letter has been issued.

Environmental Management Objectives for road building in sensitive areas

<table>
<thead>
<tr>
<th>Road construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Place the access road on existing old tracks if available.</td>
</tr>
<tr>
<td>2. Demarcate the road construction area with hazard tape and prevent any work outside the demarcated areas. In particular, demarcate trees that are not to be damaged by construction activities.</td>
</tr>
<tr>
<td>3. Prior to grading, remove all topsoil (if present) and stockpile for later use in rehabilitation.</td>
</tr>
<tr>
<td>4. Road overburden that is dumped on the down-slope of the road should not only consist of rocks, but should also include enough soil to allow vegetation to become established. This is the best way to reduce the visual impact of the scar. The overburden should also not be stabilized with concrete, since this will make it impossible for vegetation to become established. The main aim is to hide the scar with natural vegetation.</td>
</tr>
<tr>
<td>5. Do not scrape any other areas other than the road itself (i.e. the earthmoving equipment should only work in the demarcated road area.</td>
</tr>
<tr>
<td>6. If the road is to be surfaced, use natural materials (rocks with concrete) so that the colour of the road is similar to the surrounding area.</td>
</tr>
<tr>
<td>7. Do not demarcate the road with any artificial or unnatural barriers that are visually prominent – e.g., sign posts, whitewashed stones, metal railings or lights of any kind.</td>
</tr>
<tr>
<td>8. Place stormwater runoff berms at regular intervals to channel water away from the road in a manner that will not cause erosion along the side of the road.</td>
</tr>
<tr>
<td>9. Use low water drifts at all stream crossings, reinforced with concrete and place gabions to stabilise river banks.</td>
</tr>
</tbody>
</table>
### Environmental Management Objectives for road building in sensitive areas

10. For larger river crossings, ensure that the crossing structures have been properly designed by a civil engineer to ensure that culvert sizing is correct for anticipated river flows.

11. On completion, remove all industrial waste and contaminated soil to a registered landfill site.

12. Spread saved topsoil over road verges and spoil dumps to promote natural revegetation from the seedbank contained in the soil. Spread cleared brush over topsoiled areas to protect against wind and water erosion.

13. No field servicing of vehicles is to be allowed except in an emergency.

14. All vehicle servicing is to be carried out at the contractor’s camp.

15. All waste oil is to be collected for re-use or proper disposal.

### Health and safety

16. Only conduct construction work within normal working hours and not on weekends.

17. Investigate the use of construction vehicles without reversing beepers. Rather use flagmen and flashing lights in hazardous situations.

18. Conduct regular HIV/AIDS awareness and prevention training (as per MCC/A support programme).

19. All workers to use Personal Protective Equipment (PPE) at all times.

20. Adhere to speed limits on access roads at all times.

21. Maintain First Aid kit at all construction sites, including snake bite anti-venom and bee stung antihistamines.

### Facilities for workers

1. All workers will be housed in tents or caravans. The first choice option is that the “workers village” be established on a nearby farm, but the village may be established on site.

2. Wherever the workers are housed, they must be provided with water, proper toilets and washing facilities.

3. Toilets must be established on site, preferably a flush toilet mounted over a septic tank, or a dry toilet system (similar to the units used during road construction projects).

4. Cooking must be done on gas or open fires. If open fires are used, these must be made in a designated spot so that there is no possibility for a veldt fire occurring.

5. No wood may be collected on site – wood must be brought in from outside.

### Management of waste (and minimization of pollution)

1. For human waste – see above.

2. All combustible waste must be burnt in a drum (e.g., empty cement bags), with the necessary care taken to avoid the possibility of starting a veldt fire.

3. All non-combustible waste must be removed from site at least once a week to a
<table>
<thead>
<tr>
<th>Environmental Management Objectives for road building in sensitive areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. Any waste that is stored temporarily at the site must be secured in refuse bags or sealable bins to avoid it being blown into the veldt.</td>
</tr>
<tr>
<td>5. Loose litter must be collected on a daily basis.</td>
</tr>
<tr>
<td>6. Measures must be taken to prevent waste attracting scavengers (e.g., jackals).</td>
</tr>
<tr>
<td>7. No paint, solvents, thinners, diesel, oil or any other harmful substances may be poured onto the ground or into a water course. They must be collected in a container and removed from site for proper disposal.</td>
</tr>
<tr>
<td>8. Workers should be given regular talks on aspects such as waste management.</td>
</tr>
<tr>
<td>9. A system of incentives or penalties must be implemented to ensure compliance with all waste management requirements.</td>
</tr>
</tbody>
</table>
Instructions for the Borehole Driller in Sensitive Areas

Objective: To provide water for the construction and operation of the lodge or staff village without (a) overexploiting the water source, (b) significantly damaging the environment or (c) creating unsightly infrastructure.

Environmental performance indicator: Water infrastructure is located in such a way that it is not distracting to visitors and the water level and/or yield of the borehole or those in the surrounding areas do not drop in the medium to long term.

Who is responsible?

- The water drilling contractor must be instructed in writing by the developer to implement the mitigation measures. It is then his responsibility to ensure that ALL the measures are implemented.
- The Project Manager must inspect the site at least twice to make sure that the measures are being implemented.
- The Project Manager must do a final inspection once the water infrastructure is built and issue the water drilling contractor with a completion letter once s/he is satisfied that the job has been done in accordance with this EMP. A copy of the letter must be sent to DEA.
- The final payment (10%) will only be made after the completion letter has been issued.

Environmental Management Objectives for drilling boreholes in sensitive areas

Finding water (divining and drilling)

1. Either use an existing borehole (e.g., on a neighbouring farm) or establish a borehole exclusively for the lodge or staff village (as determined in the EIA).
2. The depth of the borehole, pump size, casing requirements etc will have been specified by a groundwater expert as part of the EIA.
3. Cooking (by/for drilling staff) must be done on gas or open fires. If open fires are used, these must be made in a designated spot so that there is no possibility for a veldt fire occurring.
4. No wood may be collected on site – wood must be brought in from outside.
5. All combustible waste must be burnt in a drum (e.g., empty cement bags), with the necessary care taken to avoid the possibility of starting a veldt fire.
6. All non-combustible waste must be removed from site at least once a week.
7. Any waste that is stored temporarily at the site must be secured in refuse bags or sealable bins to avoid it being blown into the veldt.
8. Measures must be taken to prevent waste attracting scavengers (e.g., jackals).
9. The waste may only be dumped at a registered landfill.
10. No paint, solvents, thinners, diesel, oil or any other harmful substances may be poured onto the ground. They must be collected in a container and removed from site for proper disposal.
11. All fuels and other chemicals must be stored in a legally-required manner, ensuring that
### Environmental Management Objectives for drilling boreholes in sensitive areas

- they cannot react with each other or be spilt into the ground.
- If vehicles or other equipment are serviced or repaired on-site, any grease, oil etc. must be collected in a container and removed from the site for proper disposal.
- A single track must be used to get to and from the drilling site.
- The area around the drilling site must be demarcated with tape and all work must be contained within the demarcated area.
- No wild animals may be trapped or killed for any reason whatsoever.

### Equipping the borehole (as prescribed by the groundwater expert in the EIA)

1. Water may be pumped by wind, solar or diesel pumps.
2. If possible, the pump should be hidden from view of tourists or general traffic.
3. If a diesel engine is used, it should be housed in a building (to reduce noise and for safekeeping) and the exhaust must be muffled.
4. If a diesel engine is used, the installation must include traps to avoid spillage of oil and diesel onto the ground.
5. The diesel engine must be serviced on a regular basis.
6. Whatever pump is used, it must be protected from elephants, either by a fence or by packing rocks around it.

### Laying the water pipeline (the route will be determined in the EIA)

1. The pipeline must be buried underground.
2. Clearly demarcate the working area along the trench and prevent any damage outside the demarcated area.
3. Do not damage any trees which are not in the immediate alignment of the pipeline.
4. Create a windrow along the side of the work area with the cut vegetation for later use in rehabilitation.
5. Remove and stockpile all topsoil for later rehabilitation of the trench.
6. Where possible, the pipeline shall be laid next to the road, whether this is the main road or the access road to the lodge.
7. Adhere to all aspects of waste management listed above.

### Health and safety

- Only conduct construction work within normal working hours and not on weekends.
- Investigate the use of construction vehicles without reversing beepers. Rather use flagmen and flashing lights in hazardous situations.
- Conduct regular HIV/AIDs awareness and prevention training (as per MCC/A support programme).
- All workers to use PPE at all times.
- Adhere to speed limits on access roads at all times.
Environmental Management Objectives for drilling boreholes in sensitive areas

- Maintain First Aid kit at all construction sites, including snake bite anti-venom and bee sting antihistamines.

Rehabilitation

a. On completion of construction, all disturbed areas are to be cleaned of all building rubble, industrial waste, contaminated soil etc. This waste is NOT to be buried but must be removed from site to a registered landfill.
b. The pipeline trench is to be backfilled with overburden material followed by the stockpiled topsoil.
c. Cover with cut branches (from initial site clearing) to protect the area from erosion.
Part E. EMP for Lodge Operations

INSTRUCTIONS FOR THE LODGE OR VILLAGE MANAGER

Objective: To manage the lodge with minimal disturbance to the surrounding natural environment, and to ensure that guests to the lodge behave in a way that does not impact negatively on the environment, wildlife and local communities and that the lodge achieves a high rating in accordance with Namibia’s Eco-Award Criteria.

It should be noted that the term “environment” includes the natural and human environment, which is why this Environmental Management Plan deals with both. However, the EMP does NOT cover equally important aspects such as customer care, financial management, stock control, etc. These “business management” issues are outside the scope of an EMP, though of course they are critical in running a lodge properly.

Environmental performance indicators:

✓ The lodge attains an Eco-rating and shows continuous improvement.
✓ Visitors notice the efforts being made by the lodge to be “environmentally friendly” and they cite this as one of the 5 main reasons why they intend to return to stay at the lodge in the future.
✓ Annual inspections by MET show that all environmental guidelines, laws and regulations, as well as this EMP are being correctly implemented.

Who is responsible?

✓ The lodge manager is responsible for ensuring that the entire operation (on and off-site) of the lodge conforms to the standards usually ascribed to “eco-tourism”.
✓ The lodge owner or conservancy manager must write the job description for the manager, ensuring that the relevant sections of this EMP are included as his/her duties.
✓ The MET must inspect the lodge at least once per year to make sure that the measures are being implemented.
✓ The manager must complete a monthly environmental report according to a prescribed format, and submit this to the Conservancy Committee as well as to the MET.

The lodge operator is strongly encouraged to consult the Eco-Award Best Practice Handbook and to apply for an Eco-Award rating. In addition the following environmental management issues require attention:

A. Waste management
B. Water management
C. Energy management
D. Tourist management
E. Pest management
F. Nature conservation
G. Maintaining sense of place
H. Community relations
A. Waste Management Objectives

Human waste
1. All toilets must be of the flush-type and all must drain into the septic tank.
2. Notices must be placed at each toilet to remind guests not to flush foreign objects down the toilet.
3. The overflow from the septic tank should be into a reed-bed soak-away.
4. Provide instructions on the use of dual-flush toilets.
5. Use bio-degradable toilet cleaners that do not kill the bacteria in the septic tank (various products are available on the market).

Solid waste (kitchen scraps, tins, bottles, paper, etc.)
6. The first priority is to reduce waste. In this regard, try to:
   - Buy supplies in large containers (e.g., cooking oil, tinned food, cleaning materials) so as to avoid too many empty bottles, tins, etc.
   - Try to avoid purchases (especially fresh vegetables) that are packaged in multiple-layers – e.g., rather buy 5 loose, unpackaged lettuces and put them in a cool box than buying 5 lettuces packaged individually in plastic and Styrofoam.
7. If possible, different types of waste should be placed in different receptacles – preferably of the “wheelie-bin” variety (e.g., vegetable cuttings into a compost drum, glass, tins, combustible, and plastics all in their own bin). “Wheelie-bins” are best because they have a proper lid, are easy to move around and are easy to clean.
8. At the end of each day (or at least twice per week), the waste must be taken to the dump site. This site MUST be properly managed, and could be located on a nearby farm. If this is the case, then the farmer (or community) can be hired as the waste-management contractor. However, it remains the responsibility of the lodge to ensure that the site is properly managed. At a minimum, the site must be fenced off to prevent access by scavengers, and as much waste as possible must be burnt to (a) reduce mass and (b) reduce flies (c) reduce scavengers (d) reduce wind-blown litter, and (c) reduce smell. The remaining waste must be covered with a layer of soil on a weekly basis for the same reasons. The dump must have a gate that must be kept locked when not in use.
9. When transporting the waste to the dump site, ensure that there is NO possibility of waste blowing or falling off the vehicle. The best solution is to load the “wheelie-bins” onto the vehicle so there is no need to transfer the waste from one drum to another. This means that at least 2 sets of bins will be required, because set number 2 will be in operation while set number 1 is being transported to and from the dump.
10. At the dump, the bins must be washed after having been emptied. They must be returned to the lodge clean and dry.
11. In the kitchen, a mesh “waste trap” must be placed in the drain where kitchen water flows into. The purpose of this trap is to trap kitchen off-cuts such as scraps of meat, vegetables etc. The trap must be cleaned at the end of each day, and the scraps must be thrown into the appropriate bin.

Hazardous waste (batteries, tyres, paints, solvents, thinners, used or expired medical equipment)
1. These types of waste must be kept separate from other waste, and may NOT be dumped in the general waste dump.
2. They must be taken to Windhoek periodically and placed in the hazardous waste dump there.

General
1. No waste of any kind may be burnt at the lodge site.
2. All chemicals used to clean surfaces (e.g., basins, floors, tables, kitchen worktops, etc.) must be of the biodegradable type.
B. Water Management Objectives

Keep water consumption to below 100 litres of water per day per person (divide total daily consumption by the number of people at the lodge – guests and staff), by adopting the following strategies:

1. Place a prominent notice in each chalet (and the staff quarters), informing guests about the importance of saving water. Specifically notify guests to:
   - Take short rather than long showers;
   - Turn taps off after washing;
   - Use towels more than once before asking for them to be washed;
   - Not wash their vehicles whilst at the lodge;
   - Only flush the toilet when necessary and use the dual flush system.

2. Do not have any lawns or gardens that need to be watered (a small vegetable garden is permitted, but it must be placed under a reed structure to reduce evaporation).

3. Install rain water tanks and use this water in the vegetable garden or for pool filling.

4. Ensure that the pool is covered when not in use to reduce water loss.

5. Wash vehicles with a bucket, not a hose.

6. Clean driveways and parking areas with a broom, not with water.

7. Wash laundry off-site.

8. Ensure that all pipes are well maintained and leaks are repaired immediately.

9. Ensure that all taps are turned off after use.

10. Floors must be cleaned with a mop, not hosed down.

11. Install a water metre, and check this daily if possible, or once a month as a minimum. Keep a register of water consumption so that trends can be monitored.
### C. Energy Management Objectives

Use as much renewable energy as possible, and limit the use of fossil fuels in the generation of energy. This can be achieved by:

1. Combining both diesel generated power and solar power (see instructions for the architect – this is both a design and a management issue, requiring planning in the early stages and committed management for the life of the lodge);
2. Only run the generator for the times required (for example to keep the refrigerator at the right temperature);
3. If solar systems are in place, make sure that they are well maintained so that they remain efficient;
4. If the same generator is used for pumping water and for powering the lodge, try to combine both tasks at the same time, so that the generator runs at maximum load, and so that is does not run unnecessarily;
5. Where fires are used for creating ambiance in the lodge, or for warmth (during winter), try to burn alien-invasive wood that is readily available (e.g., *Prosopis*) or wood that comes from bush encroaching species (e.g., *Acacia melifera*). Avoid using mopane, leadwood (*Combretum imberbe*) or other species that might be harvested unsustainably. Whatever the case, ensure that there are no significant negative environmental impacts associated with the supply of wood.

### D. Tourist Management (i.e., ensuring that tourists behave in an environmentally acceptable way)

**At the lodge**

1. Place information materials in each chalet, in which tourists are informed about:
   - The importance of conserving water;
   - How to be energy efficient;
   - The rules regarding feeding of animals;
   - Appropriate pest control (e.g., installation of owl and bat boxes, swot a fly rather than spray insecticide);
   - Not placing foreign objects down the toilet;
   - Respecting the rights of other guests (e.g., refraining from making a noise, playing radios, musical instruments, etc.).

**On game drives with the lodge vehicle**

2. Ensure that a qualified guide leads all game drives.
3. The guide must at all times drive slowly, and may not hoot or rev the vehicle unnecessarily.
4. The guide may not drive off the road.
5. The guide may only take guests to villages if arrangements have been made beforehand and if there is agreement on what the guests may see and do once in the village.
6. The guide must maintain an appropriate level of control during the drive – specifically:
   - No littering allowed (always have a refuse bag in the vehicle);
   - No noise;
   - No throwing of objects at wildlife;
   - No throwing of burning objects off the vehicle (e.g., cigarette butt).

**On game drives with own vehicles**

7. Whilst the lodge has no control over what people do when they are in their own vehicles, they can encourage good behavior by providing guidelines. These should be set of “dos and don’ts” that
people can take with them on their drive. The guideline should strongly discourage:

- Off-road driving;
- Littering;
- Wood collecting;
- Harassing of wildlife;
- Visiting villages without prior planning;
- Speeding;
- Excessive noise (e.g., hooting, revving the engine, etc.);
- Throwing of burning objects off the vehicle (e.g., cigarette butt);
- Going to the toilet in the veldt.

E. Pest Management Objectives

1. Since the lodge is to be located in a wildlife area, it is to be expected that various species of wildlife will be attracted to the lodge, and some may even live in the lodge! It is important that the right balance be maintained in ensuring the comfort and safety of staff and guests, while at the same time accepting that the presence of wildlife is inevitable and, in some cases, desirable. Specific management safeguards are:

   - NEVER feed wildlife (except birds, and then place food in hanging bird feeders);
   - NEVER leave food uncovered or in a place where it is accessible to wildlife;
   - Manage waste properly, so that it does not attract scavengers;
   - Try non-poisonous remedies or direct hitting for insect control, before using insecticides;
   - Use traps for rodents, install owl boxes, but NEVER use poison;
   - Capture and remove dangerous snakes, rather than killing them;
   - NEVER kill useful animals, such as chameleons, lizards, bats, etc. which will help the lodge to control unwanted insects such as flies and mosquitoes;
   - Maintain high levels of cleanliness, especially in the kitchen;
   - Install fly gauze doors and fly screen over selected windows to reduce the numbers of flies and other insects entering buildings;
   - Switch off lights when they are no longer needed (lights attract insects);
   - Supply mosquito nets;
   - Do not have lawns or beds of exotic plants, since these often require intensive pest control.
F. Nature Conservation

The lodge has a key responsibility in protecting wildlife. It can do this by:

- Adopting appropriate pest control management as noted earlier;
- Good waste management as noted earlier;
- Good water management as noted earlier;
- Adopting and encouraging responsible behavior during game drives;
- Not allowing any pets at the lodge (especially cats – 1 or 2 dogs could be allowed, but no more);
- Not planting alien plants;
- Helping the conservancy with wildlife monitoring and reporting illegal activities to MET;
- Creating environmental awareness amongst staff and guests.

G. Maintaining Sense of Place

1. Sense of place is a vague term, and can be interpreted differently by different people. It means a number of things, including “atmosphere”, “vibe”, “taste”, “style” and general ambiance. Whilst it is difficult to define exactly, it becomes very obvious when a lodge loses its sense of place. This usually happens if the lodge is badly designed in the first place (see instructions to architect), but it can also happen as a result of bad management.

Management must not cause the lodge to lose its sense of place, and in this regard they must specifically avoid:

- Inappropriate décor (bright or clashing colors, ugly murals or art, unnecessary statues, etc.);
- Inappropriate furniture (plastic tables and chairs, etc.);
- Shabbiness – dirty linen, dust, dirt, poorly-dressed or unclean staff, untidiness, un-emptied ash-trays, etc.;
- Disrepair - un-maintained infrastructure creates a very poor impression;
- Noise – no radios, TVs, hi-fis, noisy staff, revving vehicles, lawnmowers, air conditioners, low-flying aircraft, motorcycles, quad bikes, etc.;
- Smells – make sure that waste is properly managed so that people do not smell the rubbish bins. Also keep drains etc. clean so that these are not smelly. However, avoid the use of highly potent cleaners – guests do not want to smell detergents either!
- Over development – do not have too many signs, or any other objects that detract from the natural beauty of the area. Visitors to the lodge want a nature experience;
- Scrap – make sure there are no old vehicles or equipment lying around in various states of disrepair;
- Sterility – whilst it is extremely important to keep the lodge clean, do not sterilize it – this is a lodge NOT a hospital;
- Too many people – this will quickly destroy sense of place. Guests to the lodge want a certain degree of privacy, and this is why the number of beds must be kept low. Also, there should not be people loitering around at the lodge, whether visiting staff or looking for work.
H. Community Relations

1. It is becoming increasingly important for tourism operators to ensure that they have sound relations with the communities in the vicinity of the lodge. The lodge is in a conservancy, which means that the community has the rights over wildlife and tourism. Even though the lodge is “community owned”, it is still important for management to maintain a healthy relationship with the community. Good community relations can be achieved by:

- Respecting community rights – specifically inform guests that the lodge lies within a conservancy and that they are therefore guests of the community;
- Provide guests with accurate information on the history, culture, customs and values of the community;
- Include cultural activities as part of the tourism product, but make sure that the community is in agreement with the proposed activities;
- Do not damage any cultural or archaeological sites;
- Employ as many locals as possible for all levels of operation at the lodge;
- Consult the community to ensure that dispute resolution methods and labor practices adopted by the lodge are both within the law and cultural norms;
- Train lodge staff so that they have the knowledge to do their work properly;
- Provide opportunities for career advancement and skills development;
- Develop an outreach programme, where community representatives, including the youth are brought to the lodge from time to time, so that they have a better appreciation of tourism as an industry;
- Enter into a written agreement with the community that provides a clear understanding of the rights and responsibilities of the lodge and the community – this includes rental, areas to which access is permitted and not permitted, the responsibility of the community towards the lodge (e.g., livestock grazing areas), etc. The agreement must include dispute resolution mechanisms and penalties for non-compliance.