

**COUNTRY PROFILE  
ON  
ENVIRONMENT**

**MALAWI**

**November 1998**

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## USERS GUIDE: Contents of the Report

This report consisted of the following Chapters on environmental information of the country.

### 1. Keywords of the Environment

Various features and principal environmental issues and their related matters of the country are schematized within 1 page to easily understand the country's natural and social environmental issues on the whole.

### 2. Fact Sheet

Principal indices and natural and social environmental characteristics of the country such as economy, demographic statistics, socio-economic conditions, various important resources available in the country are described.

### 3. Institutional Context

#### 3.1 Environmental Agency

Matrix table on governmental agencies related to the environmental issues in the Chapter 4 is described to grasp the role of the agencies easily. Responsibilities and organizational structure of the principal responsible agency for the environment, and responsibilities of related agencies are explained. Main activities of the various environmental non-governmental organizations are described in the table.

#### 3.2 National Environmental Policy

Environmental policy of the country such as national environmental action plan is explained.

#### 3.3 Environmental Laws and Regulations

Environmental laws and regulations of the country including their status of applications are described.

### 4. State of the Environment

In this Chapter, status of the various environmental issues as follows are covered with information on related agencies, related standards, laws and regulations, examples of the issue are explained. In the section 4.3, other kind of considerable environmental issues in the country are described based on the report which local consultant prepared.

4.1 Air Pollution	4.7 Waste Water Management
4.2 Water Pollution	4.8 Forest Conservation/Desertification
4.3 Other Pollution	4.9 Biodiversity
4.4 Waste Management	4.10 Natural Resource Management
4.5 Energy Conservation and Alternative Energy	4.11 Natural Disaster
4.6 Water Supply	4.12 Environmental Education

### 5. International Relationship

Status of the implementation of the economic and technical assistance projects in the country are outlined. International conventions and agreements on environment which the country agreed and ratified are listed up in section 5.1, and environmental projects which are funded and/or implemented in the country by donor countries and international organization in the section 5.2. In addition, location map of the project funded and implemented by using the Official Development Assistance (ODA) of Japanese government are showed.

### 6. Sources of Information

Governmental environmental agencies related institutions and NGOs are listed with the some information such as contact address and e-mail address.

### 7. References

References used in the report are listed.



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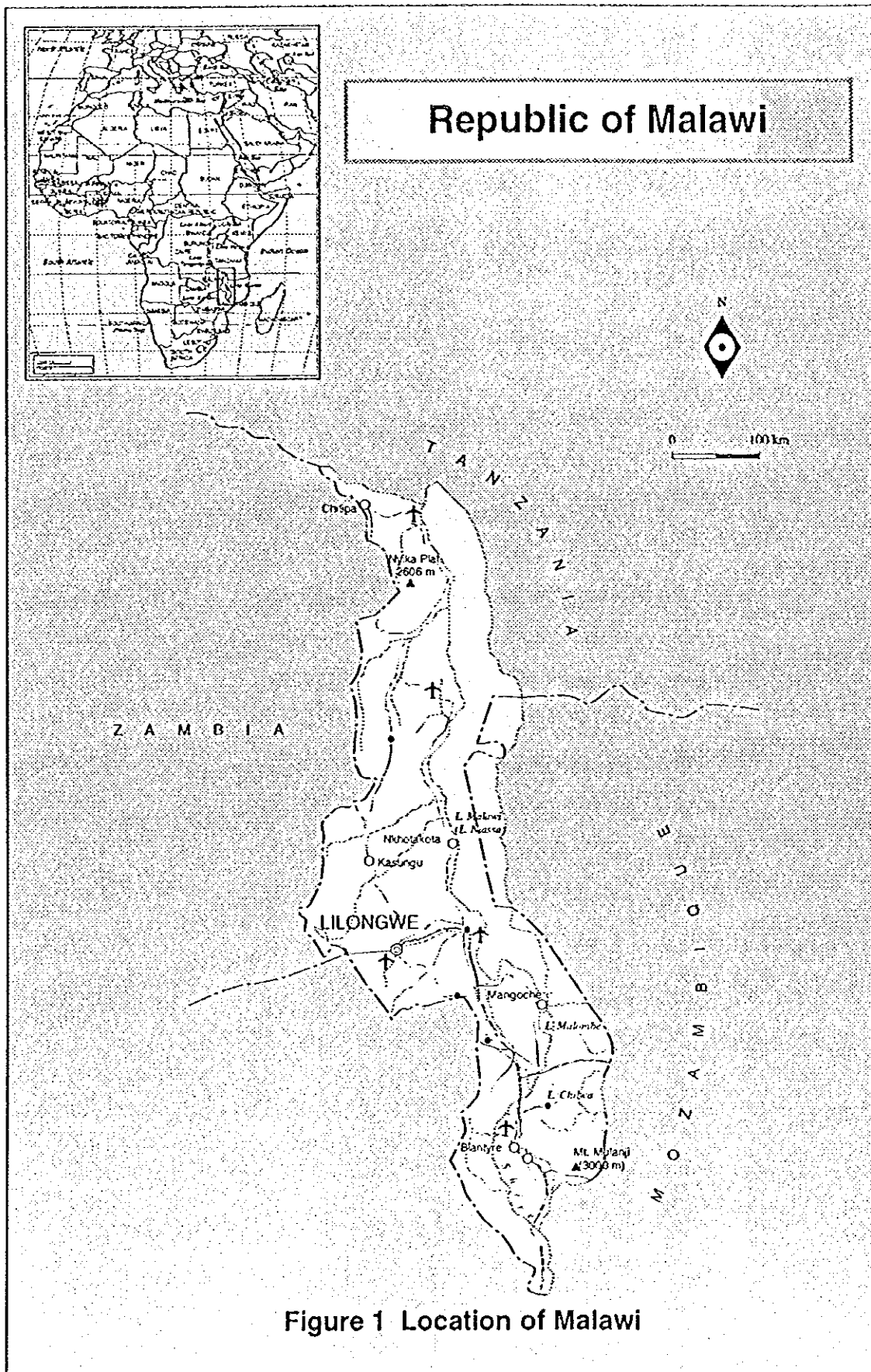
## 1. KEYWORDS OF THE ENVIRONMENT

### 1.1 Features of the Country

	Related pages
<div>①Gross Domestic Production(GDP)</div> <div>US\$188 per capita (Japan : US\$33,857, China : US\$361)</div> <div>Total : US\$2.0 billion</div>	<ul style="list-style-type: none"> <li>2. Fact Sheet p.3</li> </ul>
<div>②Poverty and High Population Growth</div> <div>Over 60% below the poverty line US\$40 per capita year</div> <div>3.5 % annual population growth</div>	<ul style="list-style-type: none"> <li>2. Fact Sheet p.3</li> </ul>

### 1.2 Keyword of Environmental Issues

	Related page
<div>① Soil erosion</div> <ul style="list-style-type: none"> <li>High sediment load in dams and siltation of reservoirs</li> <li>Deforestation</li> </ul>	4.8 Forest conservation p.13
<div>② Deforestation</div>	4.8 Forest conservation p.13
<div>③ Treat to Biodiversity</div>	4.9 Biodiversity p.13



Source: Data Atlas 1994 - 1997

## 2. FACT SHEET

### 2.1 Socio-economic Index

Index	Data	Data year	Reference
Population	11.13 million (annual average incremental rate : 3.5% (1990~95))	1995	b)
Religion	Traditional religion, Christianity	no information	d)
Literacy rate	Adult female : 37% Adult male : 69%	1990	b)
Urban Population rate	14% (1.51 million)	1995	b)
Life expectancy	46 (1990~1995 average)	1990-95	b)
Under-5 mortality rate	223 (per 1,000)	1993	b)
GNP <sup>*1</sup>	\$2,104 million (\$200/person)	1993	b)
GDP <sup>*1</sup>	\$1,974 million (\$188/person)	1993	b)
GDP structure	Agriculture : 39% Industry : 18% Service industry & others : 43%	1993	b)
Prime industry	Textiles, agriculture, sugar manufacture	1996	d)
Prime resource	Lime stone, coal, tea, tobacco, sugar cane, coffee, corn	1996	d)
Safe water (% of population with access) <sup>*2</sup>	Urban : 52% Rural : 44%	1980-1995	b)
% of sewerage population <sup>*3</sup>	Urban : 89% Rural : 60%	1980-1995	b)
Human Development Index (HDI)	0.320 (World rank 161, GDP per capita rank 154 in same year)	1994	c)

\*1 : The estimated value of the GNP was exchanged and adjusted from local currency into US\$ by means of 3-year average of exchange rates. The estimated value of the GDP was presented in US\$ of 1993 based on the exchange rate.

\*2 : "Safe water" includes treated surface water, and untreated water which is pumped up from protected spring / excavated well and sanitary well.

\*3 : "Sewered population" should be met conditions that the population in urban area can use public sewerage and indoor facility such as dug hole outdoor toilet, pouring water toilet, private sewerage system, public community toilet, and similar facilities, and that the population in rural area can use dug hole outdoor toilet, pouring water toilet, or other proper treatment methods.

### 2.2 Geographical Characteristics

Area : 119,140 km <sup>2</sup> (about 1.5 times as Hokkaido in Japan), 20% of the total area (20,908 km <sup>2</sup> ) is covered by the Lake Malawi (Lake Nyasa).
Geographical features : (no information)
Highest place : Mt. Mulanje (3,000 m)

Source: a)

### 2.3 Meteorological Characteristics

Climate: tropical continental
Season : rainy season (November ~ April), dry season (May ~ October)
Average temperature: range from 12 ~ 32°C
Average annual rainfall: range from 700mm ~ 1,800mm, highest rainfall area: Mulanje, Nyika, Viphya
Climatic classification: (no information)

Source: a)

### 2.4 Ecological Characteristics

Major biotic communities: 1) Montane evergreen forest, 2) Montane grassland, 3) Semi evergreen forest, 4) Canopy woodland, 5) Woodland, 6) Sand dune vegetation, 7) Grassland [seasonally wet and perennially wet], 8) Lakes [fresh water and somewhat saline lake with no outlet], 9) Islands
Identified animals and plants : plant species: about 5,500 species (endemic: 69), most common species of forest: <i>Brachystegia</i> , <i>Jubernadia</i> , and <i>Isobertina</i> . Lake Malawi (more than 500 fish species endemic identified)
Protected area : Lake Malawi National Park & Nankumba Peninsula: UNESCO World Heritage site, Nyika National Park, etc.

Source: a)

### 2.5 Hydrological Characteristics

Rivers: Shire, Songwe
Lakes: Malawi (Nyasa): 20,908 km <sup>2</sup> (3 <sup>rd</sup> world largest inland lake), Chilwa (RAMSAR site), Chiuta, Malombe
Marshes: Elephant, Vwaza

Source: a)



## 3. INSTITUTIONAL CONTEXT

## 3.1 Environmental Agency

## 3.1.1 Governmental Agency

(see "6. SOURCES OF INFORMATION" on each agencies and its contact address.)

Governmental Agency	Environmental Issues (Each No. consist with Section No.)											
	4.1 Air pollution	4.2 Water pollution	4.3 Other Pollution	4.4 Waste	4.5 Energy	4.6 Water Supply	4.7 Waste Water	4.8 Forest	4.9 Biodiversity	4.10 Resources	4.11 Disaster	4.12 Education
Ministry of Agriculture and Irrigation	na	○	○	○	—	—	na	○	—	—	—	—
Ministry of Water Resources	na	○	—	—	—	—	na	—	—	—	—	—
Ministry of Industry	na	○	—	—	—	—	na	—	—	—	—	—
Ministry of Fisheries	na	○	—	—	—	—	na	—	—	—	—	—
Ministry of Forestry	na	○	—	—	○	—	na	—	—	—	—	—
Cities Water Board	na	○	—	—	—	—	na	—	—	—	—	—
Central rural Water Board	na	○	—	—	—	—	na	—	—	—	—	—
Ministry of Health an Social Welfare	na	—	○	—	—	—	na	—	—	—	—	—
Ministry of Industry	na	—	—	○	—	—	na	—	—	—	—	—
Electricity Supply Company (ESCOM)	na	—	—	—	○	—	na	—	—	—	—	—
Ministry of Energy	na	—	—	—	○	—	na	—	—	—	—	—
Ministry of Industries	na	—	—	—	○	—	na	—	—	—	—	—
Ministry of Water Development	na	—	—	—	—	○	na	—	—	—	—	—
National Committee on Desertification	na	—	—	—	—	—	na	○	—	—	—	—
Ministry of Tourism, Parks and Wildlife	na	—	—	—	—	—	na	○	○	○	—	—
National Steering Committee on Environment	na	—	—	—	—	—	na	—	○	—	—	—
Department of Relief and Rehabilitation	na	—	—	—	—	—	na	—	—	—	○	—
Environmental Affairs Department	na	—	—	—	—	—	na	—	—	—	—	○
Others	na	—	—	○	○	—	na	—	—	—	—	—

Note:1) : ○ → related — → No relation na → no information

2) : 4.3 other pollutions, 4.4 Waste management,

4.5 Energy conservation and alternative energy, 4.7 Waste water management,

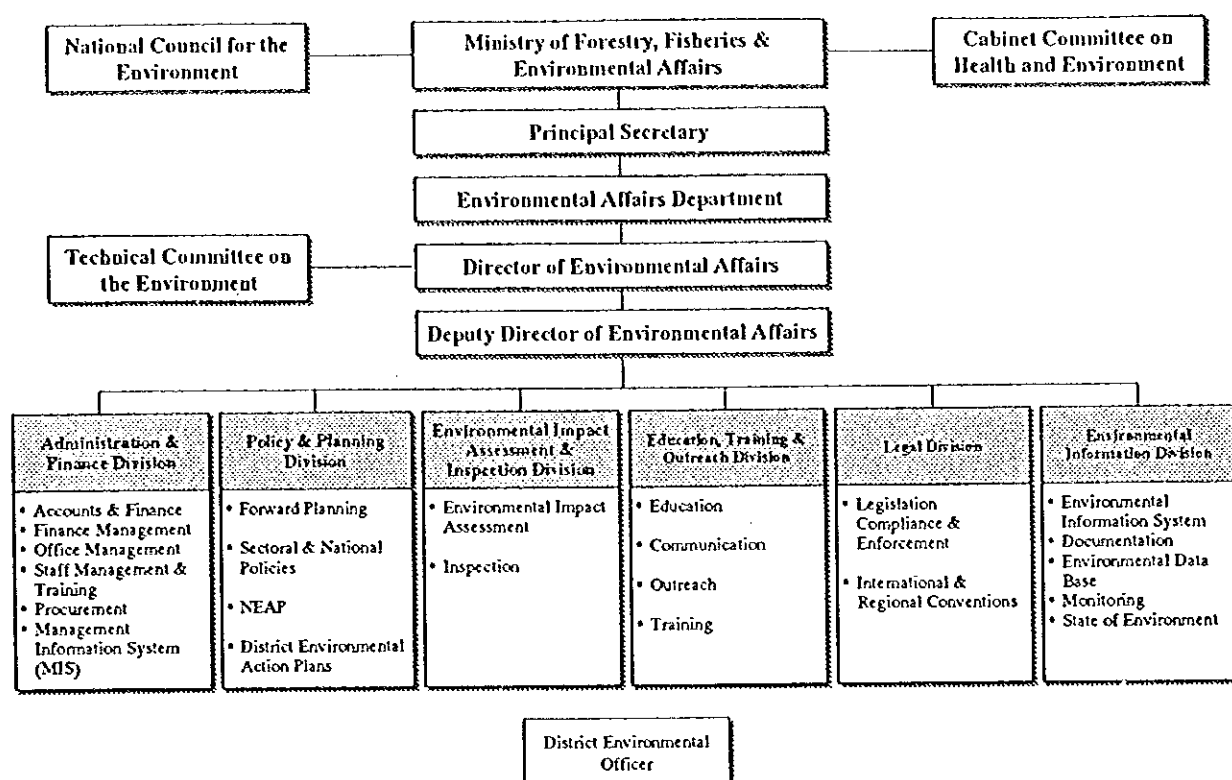
4.8 Forest conservation / desertification, 4.10 Natural resource management,

4.11 Natural disasters, 4.12 Environmental education

3) : Refer to each section related to other agencies when column "Others" is filled by ○.

## (1) Environmental Affairs Department

The Environmental Affairs Department is the lead agency on environmental management. The department is the government institution responsible for the co-ordination of environmental policies and program in Malawi. It is also responsible for monitoring development activities in the country and for ensuring that implementation of these programmes is compatible with the principles of sustainable development.



Source: a)

### Organization of Environmental Affairs Department

#### (2) Other governmental organization related to environmental issues

Organization / Outline of activities	Annual budget	Number of staff
<b>Cabinet Committee on Health and Environment (CCHHE)</b> <ul style="list-style-type: none"> <li>Established under the Environmental Management Act (EMA)</li> <li>High-level government decision-making process in environmental matters</li> <li>ad hoc basis</li> </ul>	(no information)	(no information)
<b>National Council for the Environment (NCE)</b> <ul style="list-style-type: none"> <li>Established in 1996 under the EMA</li> <li>High-level government decision-making process in environmental matters</li> <li>Regular basis, once every three months</li> </ul>	(no information)	(no information)
<b>Technical Committee on the Environment (TCE)</b> <ul style="list-style-type: none"> <li>Established under the EMA</li> <li>Provides technical advice to the NCE on technical environmental issues</li> </ul>	(no information)	(no information)
<b>Multi-agency committees on environment</b> <ul style="list-style-type: none"> <li>National Legal Task Force</li> <li>National Steering Committee on Biodiversity Conservation</li> <li>National Working Group on the Implementation of the Montreal protocol</li> <li>National Committee on Desertification</li> </ul>	(no information)	(no information)
<b>Ministry of Agriculture</b> <ul style="list-style-type: none"> <li>On-going project lead by the Ministry:               <ol style="list-style-type: none"> <li>Poverty Alleviation Pilot Project in Agro-forestry (PAPPA)</li> <li>Promotion of Soil Conservation and Rural Productivity (PROSCARP)</li> <li>Mid-Shire Catchment Management Project (under preparation)</li> </ol> </li> </ul>	(no information)	(no information)
<b>Ministry of Water Development</b> <ul style="list-style-type: none"> <li>Lead agency in the management of water resources</li> <li>On-going project lead by the Ministry:               <ol style="list-style-type: none"> <li>rehabilitation of boreholes (Water department and consultant firms do planning and monitoring)</li> </ol> </li> </ul>	(no information)	(no information)
<b>Department Parks, Ministry of Tourism, Parks and Wildlife</b> <ul style="list-style-type: none"> <li>On-going project lead by the department:               <ol style="list-style-type: none"> <li>Nyika-Vwaza Border Zone Conservation Project (funded by GTZ/KFW).</li> <li>Nkotakota Wildlife Reserve Master Plan (funded by JICA)</li> <li>Environmental Management Component (IDA)</li> </ol> </li> </ul>	(no information)	(no information)

Source: a)

## 3.1.2 Non-governmental Agency (NGO)

Name of NGO	Established year	Main activities
Action Aid Malawi	no information	no information
Adventist Development and Relief Agency	no information	no information
Africare-Malawi	no information	no information
Beekeepers Association of Malawi	no information	no information
Canadian Physician for Aid and Relief and Development (CARD)	no information	no information
Churches Action for Relief and Development	no information	no information
Concern Universal	no information	no information
Co-ordination Unit for the Rehabilitation of the Environment (CURE)	no information	no information
Enterprise Development and Training Agency (EDEP)	no information	no information
Evangelical Alliance for Relief and Development (EVARD)	no information	no information
Green Line Movement	no information	no information
Habitat for Humanity (HII)	no information	no information
Malawi Agro Forestry Extension Project	no information	no information
Malawi Association for Species and Herbs (MASH)	no information	no information
Mineral and Appropriate Technology Applicable in Malawi (MATAMA)	no information	no information
Phwezi Foundation for Education Training and Development	no information	no information
Plan International	no information	no information
Rural Foundation for Afforestation (RUFA)	no information	no information
Save the Children Federation -USA	no information	no information
Save the Children Fund-Malawi	no information	no information
Save the Children Fund-UK	no information	no information
Village Enterprise Zone Association (VEZA)	no information	no information
Wild Life Society of Malawi (WSM)	no information	no information
World Vision International-Malawi	no information	no information
Zipatso Association of Malawi (ZIPA)	no information	no information

Source: a)

## 3.2 National Environmental Policy

Policy/Project Name and Contents	Funding or Implementing Agency
<b>National Environmental Action Plan (NEAP)</b> <ul style="list-style-type: none"> <li>• Development of a National Environmental Policy and Framework Law;</li> <li>• Preparation of guidelines for Environmental Impact Assessment (EIA) and instituting a mechanism for their implementation; and</li> <li>• Clearly defining institutional responsibilities and strengthening their capacities.</li> <li>• Need to increase the general awareness of environmental issues and the development of an Environmental Information and Monitoring System (EIMS).</li> </ul>	(no information)
<b>Environmental Policy, 1996</b> <b>Specific Environmental Policy Goals:</b> <ul style="list-style-type: none"> <li>• To secure for all persons resident in Malawi now and in the future an environment suitable for their health and well being.</li> <li>• Promote efficient utilization and management of the country's resources.</li> <li>• Facilitate restoration and rehabilitation of degraded environments.</li> <li>• Enhance public awareness.</li> <li>• Promote co-operation with other governments and relevant organizations.</li> </ul>	(no information)

Source: a)

## 3.3 Environmental Laws &amp; Regulations

Laws & Regulations	Status	Related Sections
<b>Environmental Management Act (EMA)</b> <ul style="list-style-type: none"> <li>sets out the roles and responsibilities of the Environmental Affairs Department (EAD)</li> <li>emphasis that the role of the EAD be limited to co-ordination, environmental advisory services, networking, consultation and overseeing compliance with laws.</li> </ul>	(no Information)	
<b>Environmental Impact Assessment (EIA) Guidelines</b> <ul style="list-style-type: none"> <li>recently gazetted</li> </ul>	<ul style="list-style-type: none"> <li>EIA being done on projects on the prescribed list</li> <li>Need to develop sectoral EIA guidelines</li> <li>Lack of awareness on EIA requirement</li> </ul>	
<b>(Air pollution)</b> <b>Section 41 of the EMA</b> <ul style="list-style-type: none"> <li>controls ODS</li> </ul> <b>Section 42-44 of the EMA</b> <ul style="list-style-type: none"> <li>provides for regulations on pollution control.</li> </ul>	<ul style="list-style-type: none"> <li>regulations on ODS have been gazetted.</li> </ul>	4.1
<b>Water Resource Act</b>	<ul style="list-style-type: none"> <li>The Act being used, but the penalties are too low.</li> </ul>	4.2, 4.6
<b>Public Health Act</b> <ul style="list-style-type: none"> <li>cover noise problem in the Act</li> </ul>	<ul style="list-style-type: none"> <li>hardly enforced</li> </ul>	
<b>(Waste management)</b> <ul style="list-style-type: none"> <li>none</li> </ul>	<ul style="list-style-type: none"> <li>draft regulation exist</li> </ul>	4.4
<b>(Environmental standards)</b> <ul style="list-style-type: none"> <li>The EMA has provided for the prescription of Environmental Standards on Air, Water, Noise, Vibrations, Radiation, Effluent and Solid waste</li> </ul>	(no Information)	4.1, 4.2, 4.3, 4.4

Source: a)

## 4. STATE OF THE ENVIRONMENT

### 4.1 Air Pollution

This is currently a relatively small problem, but it can become serious if left unchecked. Major polluters fall under the Industry and Transport Ministries. The Chamber of Commerce also represent the Industrialists and Transporters.

Source: a)

Related Agency
(no information)

Problem Areas	Possible Solutions
<ul style="list-style-type: none"> <li>Hydrocarbon levels are not monitored.</li> <li>Improper use of hazardous chemicals.</li> <li>Use of ozone unfriendly technologies.</li> </ul>	<ul style="list-style-type: none"> <li>Establish units to monitor air pollution through establishment of standards and initiating supporting legislation and fiscal incentives.</li> <li>Conduct awareness campaigns on pollution prevention, bush burning, etc.</li> <li>Enhance capacity for disaster preparedness.</li> <li>Control emissions for Hydrocarbons.</li> </ul>

Source: a)

Source: a)

Laws and Regulations	Presence	Name of Laws or Regulations (Reference)
① Law on air pollution	○	• Section 4.1, 4.2 - 4.4 of the Environmental Management Act
② Ambient air quality standard	○	• ?
③ Emission standard (stationary and/or mobile sources)	×	
④ Environmental monitoring results	×	

Note: ○ : Issued, × : None, △ : Under planning, ? : Unknown

### 4.2 Water Pollution

All water resources are replenished by rainfall. The resources can be classified into two categories of surface-water and ground water. This falls under the Agriculture and Irrigation, Water Resources, Industry, Fisheries and Forestry Ministries and Departments. The different Cities Water Boards and the Central Rural Water Board.

Source: a)

Related Agency
① Ministry of Agriculture and Irrigation ② Ministry of Water Resources ③ Ministry of Industry ④ Ministry of Fisheries ⑤ Ministry of Forestry ⑥ Cities Water Board ⑦ Central rural Water Board

Source: a)

Problem Areas	Possible Solutions
<ul style="list-style-type: none"> <li>Sedimentation of rivers and reservoirs.</li> <li>Discharge of untreated and partially treated effluent.</li> <li>Deterioration of water resources in the streams of large cities, such as Blantyre, Lilongwe and Mzuzu.</li> <li>Proliferation of water weeds.</li> </ul>	<ul style="list-style-type: none"> <li>Review of water resource management</li> <li>Enforcement of water regulations and city by laws</li> <li>Creation of an authority or body to oversee the management of the Lake Malawi/Shire river systems</li> </ul>

Source: a)

Source: a)

Laws and Regulations	Presence	Name of Laws or Regulations (Reference)
① Law on water pollution	○	• Water Resource Act
② Water quality standard	×	
③ Effluent standard	×	
④ Drinking water standard	×	
⑤ Water quality monitoring	×	
⑥ Guidelines on water quality	×	

Note: ○ : Issued, × : None, △ : Under planning, ? : Unknown

### 4.3 Other Pollution

Industrial pollution from improper waste disposal in urban areas, such as inappropriate septic tanks disposal. For example, about 36 percent of urban households have access to good sanitation facilities. Drug and pesticide use not in accordance with laid down regulations, thus increasing incidences of people dying from accidental ingestion of drugs. Ministries of Agriculture and Irrigation, Health and Social Welfare are concerned here.

Source: a)

Related Agency
① Ministry of Agriculture and Irrigation
② Ministry of Health and Social Welfare

Source: a)

Laws and Regulations	Presence	Name of Laws or Regulations (Reference)
① Laws related	?	

Note: ○ : Issued, × : None, △ : Under planning, ? : Unknown

### 4.4 Waste Management

There is encompassing careless disposal and mismanagement of hazardous substances and chemicals mainly because of lack of adequate regulations. The issue of solid and liquid waste management is vested in the Ministry of Local Government, with the operating responsibility given to the local authorities. Outside the four major cities, there is very little knowledge about the nature, extent and manner of disposal of these wastes, and hitherto there has been no policy, planning or legislative framework designed for their management. The City Council Health Departments are directly in charge. In the case of Industrial Wastes, the individual companies have always taken necessary responsibility. The Ministry of Industry and Agriculture and Irrigation are expected to develop policies to guide against industrialists improper disposal of their wastes.

Source: a)

Related Agency
① Ministry of Local Government
② Local Authorities
③ City Council Health Departments
④ Ministry of Industry
⑤ Ministry of Agriculture and Irrigation

Source: a)

Problem Areas
<ul style="list-style-type: none"> <li>• Large stocks of obsolete pesticides exist at agricultural research stations</li> <li>• Stocks of expired pharmaceutical drugs</li> <li>• Lack of refuse collection services in traditional housing areas</li> <li>• Improperly managed landfill sites for refuse disposal</li> </ul>

Source: a)

Possible Solutions
<ul style="list-style-type: none"> <li>• Development of regulations on waste management</li> <li>• Enforcement of existing regulations</li> <li>• Public awareness</li> </ul>

Source: a)

Laws and Regulations	Presence	Name of Laws or Regulations (Reference)
① Laws on waste	×	
② Laws on hazardous waste	×	

Note: ○ : Issued, × : None, △ : Under planning, ? : Unknown

## 4.5 Energy Conservation & Alternative Energy

More than 90 percent of energy needs are from biomass. With a rapidly increasing population (a total fertility rate of 6.5), exploitation of wood for fuel is now occurring at unsustainable levels. More than 90 percent of electricity generation is from the Shire River. In drought years, the river flows have not been adequate to generate sufficient power for industry's energy needs, resulting in incessant power failures. The organisations concerned are, Electricity Supply Company (ESCOM), Ministries of Energy, Industries, Forestry and Environment, Local Government and Chamber of Commerce. The Ministry of Agriculture and Estate farmers as well. The Research Institutes have carried out trials in the Solar Energy in the recent past.

Source: a)

Related Agency
① Electricity Supply Company (ESCOM)
② Ministry of Energy
③ Ministry of Industries
④ Ministry of Forestry and Environment
⑤ Local government, • Chamber of Commerce

Source: a)

Possible Solutions
<ul style="list-style-type: none"> <li>• Incentives for investments in solar power research and utilisation.</li> <li>• Harnessing of wind power.</li> <li>• Development of Micro-and-Mini hydro plants in potential areas in the country.</li> <li>• Increased Forestry Extension Programs to encourage tree planting and woodlots.</li> </ul>

Source: a)

Laws and Regulations	Presence	Name of Laws or Regulations (Reference)
① Laws on energy use and conservation	?	

Note: ○ : Issued, × : None, △ : Under planning, ? : Unknown

## 4.6 Water Supply

Despite the abundance of water resources there are pressures being exerted on the water supply. Access to safe water differs widely in Malawi. Half the rural population has access to the main water system. Only 37 percent of Lilongwe (Capital City) urban dwellers have access to the main water system. In Blantyre (commercial centre) about 97 percent are served, but those in the urban squatter camps have limited access to safe water facilities. The state of water resources in Malawi may be described by the following statements, which are a direct response to numerous pressures:

- (a) the declining amounts of water resources to meet the demand for domestic needs, industrial production and irrigation requirements.
- (b) The declining flow depths in river channels and reduced depths of reservoirs resulting from sedimentation processes.

Concerned Ministry is the Ministry of Water Development. In 1994, the Ministry adopted a new Water Resource Management Policy and Strategy. The overall aim is to manage and use water efficiently and effectively, so as to promote its conservation and availability in sufficient quantities to the people of Malawi. The new policy also seeks for stakeholder involvement, proper economic valuation of water resources for pricing, community based management of rural water schemes, etc. Major area of concern are the increasing competing interests in the use of available water resources (e.g. for irrigation), and the protection of the catchment areas, water harvesting techniques and the legislative framework (contained in the Water Resources Act and other Acts) for controlling water pollution.

Source: a)

Related Agency
① Ministry of Water Development

Source: a)

Problem Areas	Possible Solutions
<ul style="list-style-type: none"> <li>Declining amounts of water resources.</li> <li>Declining depths in channels and reduced depths of reservoirs.</li> <li>Inadequate recharge of the aquifer due to drought.</li> <li>Deterioration of water quality.</li> <li>Pollution from agro-chemicals.</li> <li>Increased frequency of floods.</li> <li>Proliferation of water weeds.</li> <li>Siltation of reservoirs.</li> <li>Poor monitoring.</li> <li>Reduction in base flows.</li> </ul>	<ul style="list-style-type: none"> <li>Expansions of existing water supply systems.</li> <li>Enforcement of regulations on pollution.</li> <li>Protections of water catchment areas.</li> <li>Control of waterweeds through biological control.</li> <li>Development of water which involves stakeholder.</li> <li>Choice of technology.</li> <li>Awareness.</li> <li>Dredging and rehabilitation of existing dams.</li> <li>Constructing water dams and reservoirs for water harnessing.</li> </ul>

Source: a)

Source: a)

Laws and Regulations	Presence	Name of Laws or Regulations (Reference)
① Laws on water resources and supply	○	• Water Resource Act
② Laws on use of water resources	?	

Note: ○ : Issued, × : None, △ : Under planning, ? : Unknown



## 4.7 Waste Water Management

There is a serious problem in this area of appropriate management of water resources. There is a consequent inadequate water supply for domestic purposes due to increased populations in the cities, the chemical contamination of stream water in urban and peri-urban areas. For example, the discharge of untreated or partially treated industrial and domestic wastes into water bodies, especially in rivers that flow through cities. There is also the infestation of water bodies (areas of Lakes Chilwa and Malawi, and Shire River) by invasive plants, such as the water hyacinth.

Source: a)

Related Agency
(no information)

Problem Areas
<ul style="list-style-type: none"> <li>• High demand for industrial use.</li> <li>• Encroachments of water catchment areas due to increasing population growth.</li> <li>• Recurrent drought conditions.</li> <li>• Poor management of water supply systems.</li> <li>• Lack of clear responsible authority on water management issues.</li> </ul>

Source: a)

Possible Solutions
<ul style="list-style-type: none"> <li>• Protection of water catchment sites.</li> <li>• Enforcement of regulations.</li> <li>• Need for research to determine pressure indicators in the water sector.</li> <li>• Determination of the capacity of the underground resources.</li> <li>• Creation of a Lake and Rivers authority.</li> <li>• Construction of multipurpose dams.</li> <li>• Proper management of catchment areas.</li> <li>• Preventing farming on river banks.</li> <li>• Employment and adoption of water harvesting techniques.</li> <li>• Promote commercial forest ownership.</li> </ul>

Source: a)

Laws and Regulations	Presence	Name of Laws or Regulations (Reference)
① Laws on sewerage system	?	
② Laws and regulations on industrial effluent	?	
③ Effluent standard	?	
④ Results of monitoring	?	

Note: ○ : Issued, × : None, △ : Under planning, ? : Unknown

## 4.8 Forest Conservation / Desertification

A rapidly increasing population of 10 million people (1996), 50 percent of who are living below the poverty line. 54 percent of urban dwellers and 46 percent of rural dwellers are in poverty. With 80 percent of the population in subsistence agriculture has led to clearing of vegetation for farmland and for fuelwood. Forests are disappearing at the average annual rate of 1.4 percent. This has led to deforestation and aggravated soil erosion with the loss of top soil in most of farming areas across the country.

Source: a)

Related Agency
① Ministry of Agriculture
② Ministry of Tourism, Parks and Wildlife
③ National Committee on Desertification

Source: a)

Possible Solutions
<ul style="list-style-type: none"> <li>• Government recently passed a new forestry act, which has provisions for community management of the country's forestry resources</li> <li>• Promote community afforestation</li> <li>• Encourage an increase in the energy/wood saving practices</li> <li>• Promote agro-forestry.</li> <li>• Promote awareness programs that discourage attitudes and beliefs destroying forests</li> </ul>

Source: a)

Laws and Regulations	Presence	Name of Laws or Regulations (Reference)
① Laws on forest conservation	△	
② Laws and regulation on protection area	?	
③ Laws on desertification	?	

Note: ○ : Issued, × : None, △ : Under planning, ? : Unknown

## 4.9 Biodiversity

Malawi biological diversity is threatened from several factors including high population growth, inadequate enforcement of natural resource management regulations, introduction of new species, over exploitation of resources, pollution and natural disasters. Whilst the government has little control on the habitat deterioration on customary land, its objective in protected areas is to maintain all the habitats in their natural state.

Source: a)

Related Agency
① Ministry of Tourism, Parks and Wildlife
② National Steering Committee on Environment

Source: a)

Possible Solutions
<ul style="list-style-type: none"> <li>• Reduction in the population growth rate through family planning programs.</li> <li>• Introduction of income generating activities.</li> <li>• Border zone management.</li> <li>• Law enforcement.</li> <li>• Guarding against introduction of foreign species.</li> <li>• Appropriate technology development. Controlling evasive species.</li> </ul>

Source: a)

Laws and Regulations	Presence	Name of Laws or Regulations (Reference)
① Laws on protection for fauna and flora	?	
② Laws and regulations for protection for specific species	?	
③ Laws and regulations on hunting	?	
④ Laws and regulations on protection area	?	
⑤ Listed species in the Red Data Book	?	

Note: ○ : Issued, × : None, △ : Under planning, ? : Unknown

## 4.10 Natural Resource Management

The country's natural resources are under threat due to an increasing population and lack of alternative sources of income. The agencies concerned are the Department of Fisheries, Forestry, Parks and Wildlife. The Wildlife and Conservation Society is a private organisation that is vigorously involved in this area.

Source: a)

Related Agency
① Department of Fisheries, Ministry of Tourism , Parks and Wildlife
② Department of Parks, Ministry of Tourism , Parks and Wildlife
③ Department of Forestry, Ministry of Tourism , Parks and Wildlife
④ Department of Wildlife, Ministry of Tourism , Parks and Wildlife
⑤ Wildlife and Conservation Society

Source: a)

Possible Solutions
<ul style="list-style-type: none"> <li>• Prevent soil erosion, deforestation, and expansion of cultivation to marginal lands.</li> <li>• Identify alternatives to over reliance on agriculture.</li> <li>• Review of land policy.</li> <li>• Adoption of land reform recommendations.</li> <li>• Rehabilitate degraded lands</li> <li>• Intensify afforestation</li> <li>• Prevent livestock overgrazing</li> <li>• Implement programmes that widen employment of rural people</li> <li>• Political advocacy on natural resources management</li> <li>• Creation of Trust funds to finance various environmental management programs.</li> </ul>

Source: a)

Laws and Regulations	Presence	Name of Laws or Regulations (Reference)
① Laws on conservation of natural resources	?	
② Laws on use and conservation of mining resources	?	
③ Laws on underground resources	?	

Note: ○ : Issued, × : None, △ : Under planning, ? : Unknown

## 4.11 Natural Disaster

Within the last 5 years there have been cases of Mountain Flash Floods, in which people lost their lives. Experience has shown that such natural disasters are beyond the scope of the authorities. Although the country is located in the Rift valley region, prone to earth tremor, but no such incidence in living memory. In fact no special force is available to deal with such emergencies. Only the over-stretched Police, while the Fire Brigade lack equipment or none at all. Periods of bad weather are very much in the memory of the citizens, as they have recently tasted the extremes of the weather. Early 1990s were periods of drought while the mid-1990s were of flood disasters, especially for those in the Lower Shire area of the country and Karonga in the north. Those living at the banks of the country's main river (Shire River) also had some sad experience of flooding. The donor community has been of great assistance. Co-ordination of natural disasters in the country is the duty Department of Relief and Rehabilitation. They usually work hand in hand with donor agencies to effect solutions food and shelter and basic necessities of life to those affected.

Source: a)

Related Agency
① Department of Relief and Rehabilitation

Source: a)

Laws and Regulations	Presence	Name of Laws or Regulations (Reference)
① Laws on natural disaster	?	

Note: ○ : Issued, × : None, △ : Under planning, ? : Unknown

#### 4.12 Environmental Education

Malawi developed an environmental communication and communication strategy for the natural resources management. Only small sections of this have been implemented. There is need to review and up-date the strategy. This is an area for the DEA in conjunction with resource persons of other sector Ministries.

Source: a)

Related Agency
① Environmental Affairs Department

Source: a)

Laws and Regulations	Presence	Name of Laws or Regulations (Reference)
① Laws on education	?	
② Guidelines on environmental education	?	

Note: ○ : Issued, × : None, △ : Under planning, ? : Unknown

## 5. INTERNATIONAL RELATIONSHIP

The water resources are the most shared resources of the country. Malawi shares Lake Malawi with Mozambique and Tanzania. These therefore bring trans-boundary management issues. Two-thirds of the catchment for the lake is in Tanzania. So far there have been no record of trans-boundary problem on the water.

It has been reported recently that effluent discharges from Tanzania caused the death of fishes in the Songwe River (northern Border River. Reported cases of cholera in Karonga, Chitipa and Nkhata-bay (in the north) have been linked to effluent discharges into the Lake Malawi from the Tanzania side. There are also minor disputes on the boundary of the Songwe River by the communities living close to the river. These issues are currently under discussion by the two countries.

Other areas requiring co-operation are with respect to management of wildlife. Several of Malawi's National Parks have an international border. This calls for joint anti-poaching activities. Similarly, efforts in disease control should be jointly done. There are successes of joint efforts in agriculture, but not very much success in wildlife management. For example, efforts to control tsetse fly were not done in Zambia with whom Malawi shares a border.

Source: a)

### 5.1 International Convention

Name of international Convention	Year
(no information)	

### 5.2 International Environmental Cooperation

Donor government/inter-national agency	Features of cooperation
ADB	Have supported projects in the water sector.
CIDA (Canada)	Have supported several projects in the water sector.
Chinese Government (Taiwan)	The Chinese government has supported projects in irrigated farming (agriculture) and water sectors.
DANIDA	It is a recent donor in the area of environmental management. Had been funding natural resources projects in the water development sector, including irrigation projects. It also provided financial and technical assistance to produce the First State of the Environment Report. DANIDA will also be supporting environmental offices in Zomba, Chitipa, and Karonga.
European Union	Currently supporting programmes at the community level through the Ministry of Agriculture, Land Resources Unit PROSCARP project.
Egyptian Government	Have supported projects in the water sector.
French government	Have funded feasibility Study for Irrigation project development in the Lower Shire area. They are now funding the Pilot Phase project in this area.
GTZ/KFW	In the past five years GTZ has supported fisheries projects in the fishing districts of Zomba and Mangochi, which were also targeting women and encouraging them to enter the fish marketing field. The other objective was looking at developing capacity in the local communities to enable them manage fishing on their own. KFW has supported projects in water development as well.
JICA	Has supported projects in the water resources sector and irrigation sector. They are presently funding the construction of the 800-hectare Bwanje Valley Irrigation Project.
Netherlands	Have supported various projects in the natural resource management. They intend to support vocational training colleges in the agriculture and natural resources sector.
NORAD	Supported the establishment of the Blantyre City Fuelwood Project. In the project a protected area will be handed down to the local communities to manage on their own. Funded the construction of 400 hand augered wells in the north.
Nordic Development Fund	Through this fund, many water resources projects were funded and are still being supported.
ODA/DFID	They intend to support projects in environment and natural resources. Previously have supported water and smallholder irrigation projects.

Donor government/inter- national agency	Features of cooperation
UNDP	Under the 5th Country Programme, UNDP supported Agro-forestry project and capacity building in the Environmental Affairs Department. It has also supported preparation of the Agricultural and Livestock Development Strategy and Action Plan and the VISION 2020 document. Currently, they are supporting rural water supply projects in selected districts in the southern region. They also funding NGOs' training programmes in Capacity Building. They are also funding the upgrading of the Ndirande slum area in the city of Blantyre.
Swedish Government	Have expressed interest to support projects in the water sector.
USAID	Provided technical and financial support for the first environmental monitoring project on determining the impact of policy changes in agriculture. Provided support for institutional strengthening of the environmental affairs department. Support for the review of policy and legislation reform on environment management. Support for the management of natural resources through the US \$ 40m.
NATURE Programme	Funding NGOs through government on the Rural Water Supply Schemes Projects.
World Bank	The World Bank supported the production of the National Environmental Action Plan with funding from a Japanese grant and through a loan worth US \$12.6 million. Funding the implementation of some activities in the ESP, which is underway. The loan agreement is a project titled Environmental Management Project. 19 sub-projects are funded by the WB/NDF/GOM under the National Water Development Project. This is a 5-year project (1996-2001) with total project costs of US \$94.1 million.
ADB/ADF	Have also provided funds in the past for the preparation of feasibility studies and EIA on the proposed Lower Shire Irrigation Project. They are also providing fund for Water Development Projects.

Source: a)

## 6 INFORMATION SOURCE

### 6.1 Governmental Agency and Others

Organization	Address
Department of Environmental Affairs (DEA)	City Centre, P/Bag 394, Lilongwe 3. Tel: 781 111, Fax: 781 487
National Commission for the Environment (NCE)	Email: <a href="mailto:rkabwaza@unima.ac.org">rkabwaza@unima.ac.org</a> % DEA, Lilongwe
Ministry of Agriculture and Irrigation / Land Resources and Conservation Branch	Old Town, Box 30134, Lilongwe. Cell: 823335, Tel: 741988, Fax: 784915  Capital Hill, Box 30134, Tel: 782466, 784299, 783446 Fax: 783450 Email: <a href="mailto:moald@co.wn.ac.org">moald@co.wn.ac.org</a>
Department of Fisheries	Chilambula Road, Box 593, Lilongwe. Tel: 826918/743239/721766 Fax: 743614/721117
Department of Forestry	City centre, Box 30048, Tel: 781417/781160 Fax: 784268
Department of Meteorology	Chileka Airport, Box 2, Chileka, Blantyre Tel: 694355, Fax: 694332
Department of Water Resources	Tikwere House, P/Bag 390 Tel: 780344, Fax: 784678/783737
PROSCARP (Promotion of Soil Conservation and Rural Production)	OldTown, New BuidingSociety House Box 1481, Tel: 742 500/742 524, Fax: 742 574
Malawi Agroforestry Extension Project (MAFE)	Box 2440, Lilongwe. Tel: 742 496/742 406, Fax: 744064
Co-ordination Unit for the Rehabilitation of the Environment (CURE)	Box 2916, Limbe, Malawi. Tel: 621451, Fax: 621468 Email: <a href="mailto:cure.malawi@unima.wn.ac.org">cure.malawi@unima.wn.ac.org</a>
UNDP	Box 30135, Lilongwe. Tel: 783500, Fax: 783637
University of Malawi, Chancellor College	Box 278, Zomba Tel: 522222
Department of Public Health, The Polytechnic, University of Malawi	P/Bag 303, Chichiri, Blantyre
Geodetic Associates	Development House, Box 30290, Lilongwe. Box 154, Lilongwe.
Scott, Wilson, Kirkpatrick	Box 31260, Lilongwe
Adaran Johnson Associates	Tel: 722001

Source: a)

### 6.2 Embassy

Name of agency	Person in charge	Contact address
Embassy of Japan (held concurrently by Embassy of Japan in Zambia)	no information	• Embassy of Japan in Zambia No. 5218, Haile Selassie Avenue, Lusaka, Zambia
Embassy of Malawi	no information	• 3-12-9 Osaki, Shinagawa-ku, Tokyo, Japan 141 Tel: 03-3449-3010

Source: d)





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