FRamework for
Assessing,
Monitoring and
Evaluating
the environment in refugee-related operations

FRAME TOOLKIT

Module II
Environmental Assessment

UNHCR
United Nations High Commissioner for Refugees
Haut Commissariat des Nations Unies pour les réfugiés

care

TABLE OF CONTENTS

GLOSSARY AND ACRONYMS

Action refers to the "on the ground" implementation of a structured set of activities arising from a decision to achieve a specific goal or set of objectives, for example, the siting of a new camp in an emergency situation.

Alternative refers to a different option for achieving the same goal or objectives. An alternative might be the selection of a different site for a camp, or the suggested use of agroforestry practices instead of the inappropriate and damaging practice of monocultures.

Environmental Assessment (EA) is a structured approach to predicting the impacts of a proposed action *before* it is implemented. An EA is generally used when the impacts of an action cannot be understood without a systematic and focused study. Once the impacts are known or estimated, measures can then be taken to avoid damaging the environment (including the livelihoods of people living in that environment) and enhance benefits. Environmental assessment is a tool to prevent unnecessary damage that can be expensive to repair once the action has been implemented.

Environmental Action Plan is a plan produced from either an environmental assessment or a rapid environmental appraisal. It takes recommendations on measures to mitigate and monitor impacts and combines them within a systematic framework of operation. The framework will provide for the allocation of responsibilities, resources and specific time periods to individuals and organisations so that they can implement the *mitigation* and *monitoring* in the most cost-effective way.

Environmental Impact is the *expected* change in an environmental factor over a specified period, and within a defined area, resulting from a particular proposed action.

Geographical Information System is an organised collection of computer hardware, software, geographic data and personnel designed to capture, store, update, manipulate, analyse and display all forms of geographic data in an efficient manner.

Impact Significance refers to a judgement on the importance of an expected impact and whether it is acceptable or unacceptable: if the latter, it will require mitigation.

Livelihood refers to the capabilities, assets and activities by which an individual, household or community maintains and tries to enhance his/her/their standard of living and quality of life.

Local Government is the entity recognised as the decision-making body for local policies and actions. Members can be elected or appointed by central government. Local government can also refer to traditional institutions (e.g. councils of elders and or chiefdom) that derive their legitimacy from a specific society or ethnic group.

Mitigation refers to actions that can be taken to prevent, avoid or reduce damaging impacts – some such actions can have beneficial impacts.

Monitoring is the activity involved in tracking environmental impacts once an action has been implemented. It involves the selection of an indicator such as vegetation cover and measuring this over a specific time period to detect whether it is increasing, decreasing or remaining stable. Monitoring requirements are often contained in *Environmental Action Plans*.

Rapid Environmental Assessment (REA) is a quick, focused environmental study of the likely impacts of proposed – often small-scale – projects that do not require the more formalised and detailed approach of an environmental assessment. The aim, like that of an environmental

assessment, is to avoid unnecessary environmental damage, but it is completed usually with fewer resources and in less time than a formal assessment.

A **refugee** is a person who "owing to a well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group, or political opinion, is outside the country of his nationality, and is unable to or, owing to such fear, is unwilling to avail himself of the protection of that country..." (The 1951 Convention relating to the Status of Refugees).

Remote Sensing is a means of acquiring information about an object or area without contacting it physically. Methods include aerial photography, radar and satellite imaging.

Re-integration refers to the ability of returning refugees (as well as internally displaced persons and others) to secure the necessary political, economic, legal and social conditions to maintain their life, livelihood and dignity.

Repatriation relates to the return of refugees to their country of origin in safety and dignity.

Residual Impact is the expected impact once the effects of mitigation have been taken into account.

A **returnee** is a refugee who has returned to his/her country or community of origin.

Scoping is a structured means of identifying the likely significant impacts of a proposed *action* by careful, structured consultation with stakeholders. Scoping results form the starting point of environmental assessment work. This is not a requirement for rapid environmental appraisal.

Stakeholders are government agencies, organisations, social groups (such as indigenous people) or categories (such as women or the elderly), and individuals whose interests might be affected by a project and/or who might be able to influence decisions on whether an action should be implemented.

Terms of Reference (TORs) are prepared for environmental assessments either before scoping or immediately afterwards. They are a written statement of the work to be done to prepare an Environmental Assessment Report and usually include timing requirements, the consultations to be implemented and the number and form of the reports (interim, draft or final) to be produced.

ACRONYMS

CEAP	Community environmental action plan
EA	Environmental assessment
EMG	Environmental Management Group
FRAME	Framework for Assessing, Monitoring and Evaluating the Environment in Refugee-related Operations Project
GIS	Geographical information system
GPS	Global positioning system
IP	Implementing Partner (of UNHCR)
NGO	Non-governmental organisation
REA	Rapid environmental assessment
TOR	Terms of Reference
TSS	Technical Support Section (UNHCR)
UNHCR	United Nations High Commissioner for Refugees

1. WHY ENVIRONMENTAL ASSESSMENT?

Environmental concerns need to be taken into account at all stages of a refugee or returnee operation – from an emergency to protracted care and maintenance programmes, as well as during repatriation and re-integration exercises. Different concerns will need to be addressed according to the specific operation, but also in accordance with the local situation, including social and economic issues as well as environmental needs and realities.

Experience shows that environmental concerns need to be considered and addressed in almost all UNHCR refugee-related activities. To this effect, UNHCR has supported and undertaken a number of studies to identify and assess the significance of the environmental impacts of existing or past refugee operations. Periodically, studies have also been implemented to consider the suitability of one or more sites for a refugee population by examining and comparing likely impacts, for example, the environmental assessment of the proposed Ilagala refugee site, Tanzania (UNHCR, 2000).

BOX 1. PREVENTING ENVIRONMENTAL DEGRADATION BY AN EARLY ENVIRONMENTAL ASSESSMENT

A camp was developed in central Thailand during the mid-1990s to house some 15,000 refugees from neighbouring Burma. The site was characterised by grassy slopes – the result of local slash-and-burn agriculture – in an area of wooded hills, next to a main road and small lake. Close to an officially designated forest reserve, the camp lies in the lower catchment of a series of small streams that flow into a small river before entering the lake. No environmental study was undertaken before refugees were settled in this area: a number of significant problems have, however, developed which need – and will likely continue to need – attention.

Among the negative impacts of this action has been:
- hostility with the host community because of the loss of agricultural land and ineffective compensation;
- erosion on slopes, threatening refugee homes, camp structures and roads; and
- pollution of the streams, river and lake by wastewater from the refugees and their livestock, especially pigs. The lake is the source of water for the camp and must be boiled before use, thus adding to the demand for cooking fuel.

To deal with these issues UNHCR is paying a local non-governmental organisation to combat soil erosion through contour building and replanting of ground cover, by encouraging stepped terraces for household gardens, by removing pit latrines and pig pens from their former locations next to open water sources, and by initiating joint actions with the host community. All of these activities cost money and take time: they could have been avoided if an EA had been implemented to either assist in site selection, and/or identify the likely harmful impacts of siting the camp at this particular location and to recommend measures to prevent them from occurring.

Such studies have been implemented on a case-by-case basis and have often been termed "Environmental Assessments". These studies have, however, not used a consistent approach, so the results vary considerably. The use of the term "Environmental Assessment" has also caused some confusion as this now has a distinct and well understood meaning amongst international donors, government agencies and non-governmental organisations (NGOs). It is known to be **a tool used to predict and evaluate impacts of a proposed action before it is implemented**. Only a few of UNHCR's so-called "environmental assessments" carried out to date have actually conformed to this type of study.

Consequently, UNHCR has decided to standardise environmental assessment (EA) practice across its refugee-related operations by issuing this Handbook. A further reason supporting a

common EA practice is the increasing number of governments that have laws and regulations requiring EAs for some of the typical actions undertaken by UNHCR, for example identifying a new site for a refugee population and developing often quite considerable infrastructure in and around this location. While the need to conduct an EA is still not rigorously imposed, it is likely that UNHCR will in future be required to implement such EAs, for a range of its actions, to meet national requirements.

Apart from the considerations mentioned above, there is also a practical reason for carrying out a systematic implementation of EAs. Failure to identify, in advance, damaging impacts has resulted in scarce resources being spent on measures to ameliorate or clean-up environmental damage, especially when such damage threatens the well-being of refugees as well as host communities (see Box 1). Environmental assessments can avoid such unnecessary future expenditures and can, when wisely used, be a positive tool for environmental management.

Not all proposed actions in a refugee operation, however, require that an EA is carried out. Some need a less formalised and detailed level of analysis. This Handbook therefore also provides a number of simple checklists to assist consideration of environmental issues for these actions (Annex III). Alternatively, if there is some doubt about whether a formal EA is required or not, it might be worthwhile carrying out a Rapid Environmental Assessment (REA), as described elsewhere in this Toolkit (**Rapid Environmental Assessment – A Handbook on its use in Refugee and Related Operations**).

2.   THE HANDBOOK EXPLAINED

2.1   INTRODUCTION

This Handbook applies to the use of environmental assessments for proposed actions that fall within the following types of assistance:
- emergency or emergencies;
- care and maintenance;
- voluntary repatriation;
- local settlement – assimilation in first country of asylum; and
- resettlement in a third country.

In addition, particular guidance is given on the role of EA in site identification and selection, given the recognition that environmental degradation can often be traced back to this phase of an operation.

This Handbook has been prepared to assist UNHCR and its Implementing Partner staff and government authorities improve the way in which environmental considerations are incorporated into decisions affecting certain refugee-related situations. It is consistent with UNHCR policies on the environment and

> **ENVIRONMENTAL ASSESSMENTS EXPLAINED**
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> To help familiarise users with this tool, a number of Frequently Asked Questions, with corresponding answers, are listed in Section 2.2.

sustainable development and complements UNHCR's (1996, 2005) **Environmental Guidelines**. Also, it is consistent with, and does not replace, UNHCR's Guidelines on **People-oriented Planning** (UNHCR, 1994).

In preparing for an EA, the first step for the user is to define the type of proposed activity or action that may need environmental attention. By consulting Section 3.1 (**Is an Environmental Assessment Required?**) and Section 3.2 (**Is an Environmental Assessment Required if National Laws do not Apply?**) the user can decide whether or not an EA or REA is necessary. In most cases the decision will be easy. If there is any doubt, however, an environmental specialist – from within UNHCR or another agency – should be consulted. If a decision is taken to undertaken an EA, Section 3.3 (**Preparing for an Environmental Assessment**) outlines some of the steps to consider taking.

Section 4 (**Conducting an Environmental Assessment**) describes the overall process to be followed, guiding the user through this most critical phase of an EA, following a number of standard tasks. These tasks should be adhered to in all applications of this tool so that all EAs meet certain basic requirements, according to accepted international practice. Following the instructions outlined in this section, the user will be guided from the first phase of describing the characteristics of the area/situation in question to assimilating data in a suitable format for reporting and decision-making.

While the guidance outlined in Section 3 will find relevance in most situations, further illustration of how an EA can be usefully applied to the process of site selection is given in Section 5 (**The Use of Environmental Assessment to Identify Sites for Camps and Settlements**). Experience shows that this is often a critical phase when environmental degradation can take place or be prevented.

A specific example on the use of EA in a field situation – where enlargement of a refugee camp was being considered – is given in Annex I. Examining this EA report may be helpful for those working on an EA for the first time. Linked to this, **Sample Terms of Reference for a**

Preliminary Environmental Assessment are described in Annex II. These should be modified to suit particular needs in a given situation. Finally, Annex III contains a number of **Checklists** which might help users to identify concerns that relate to forestry, infrastructure, agriculture and more.

In order to facilitate the use of the EA process, this Handbook describes the application of an EA process in very general terms. Some situations may, however, require more specialist attention, coverage of which may not be included in this Handbook. In such cases, the information contained in this volume should still assist managers or practitioners in determining what particular form of assistance might be required from relevant technical experts.

> **WHAT IS THE LIKELY IMPACT OF…?**
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> Checklists in Annex III may help determine the possible impacts of the following proposed actions:
> - extensions to access roads;
> - maintenance or widening of access roads;
> - borehole construction and other forms of water supply;
> - agroforestry projects for food security purposes;
> - waste recovery, recycling and re-use;
> - actions to improve or maintain soil fertility;
> - amenity tree planting, e.g. to provide shade and fruit; and
> - afforestation for security of wood supply for fuel and construction.

Users who need to understand the basics of an EA and the situations in which it needs to be used, but who will not necessarily be implementing the EA or directly managing the process, are especially directed toward Sections 2 and 3, to obtain a general overview of what might be required and how to go about organising an EA.

Others, who may be more familiar with the EA process and have been commissioned to undertake an EA, might wish to concentrate on Sections 4 and 5, as well as Annex III, where information specific to refugee-type situations is described.

2.2   FREQUENTLY ASKED QUESTIONS

To help users gain an understanding of environmental assessment or rapid environmental assessment some "Frequently Asked Questions" are listed below with explanations to their meaning.

➢ **WHAT IS ENVIRONMENTAL ASSESSMENT?**

Environmental assessment is an internationally established tool used to predict the environmental impacts of a proposed action **before a decision is made to implement the action**. In many countries, an EA is a legal requirement for certain types of proposed projects – including in some situations the construction of a new refugee camp/settlement or extension to an existing one. The advice presented in this Handbook on how to conduct an EA reflects current international practice. As a result, any EA reports prepared by following this guidance ought to be acceptable to donors, governments and NGOs in terms of being in accordance with accepted good EA practice.

➢ **HOW DOES THIS DIFFER FROM RAPID ENVIRONMENTAL ASSESSMENT?**

Some projects can have localised or limited impacts, which can be potentially serious but may not be of a scale that would require a formal EA. However, some kind of environmental study may be necessary. Possible examples are road maintenance and/or widening, the drilling of boreholes and some environmental projects such as tree planting. In most cases

the impacts are well-known, in advance, and the mitigation measures are equally familiar and known to be successful. Basically, there is less uncertainty compared with the actions that are subject to an EA. In such a situation, a rapid environmental assessment – which usually involves a lower level of detail and has a much more narrow focus than an EA – can be used. This can, however, follow the same sequence of tasks as an EA if that were considered to be useful, but it is not a requirement.

➢ **WHAT IS THE BENEFIT OF CARRYING OUT AN ENVIRONMENTAL ASSESSMENT?**

Knowing in advance what may happen allows informed decisions to be made on project siting, design and the method(s) of implementation that can help reduce adverse consequences and maximise potential project benefits. This preventive approach can avoid future threats to the host community, refugees and, possibly, the institution of asylum.

➢ **HOW ARE THE RESULTS OF AN ENVIRONMENTAL ASSESSMENT IMPLEMENTED?**

Recommendations from an EA should be included in a brief Environmental Action Plan indicating how significant adverse impacts will be mitigated and beneficial opportunities enhanced. This same plan should also include guidance on how and when to monitor expected, important environmental impacts so as to provide an early warning of potentially serious impacts. This would allow action to be taken to prevent them from occurring, or at least help reduce their severity.

➢ **WHAT KIND OF REFUGEE-RELATED ACTIVITIES COULD BE SUBJECT TO AN ENVIRONMENTAL ASSESSMENT?**

Environmental assessment can play a useful role in the following:
- contingency planning that includes the identification of possible sites for new camps;
- identification and the selection of camp/settlement sites and their design;
- if significant expansion is being considered for an existing camp/settlement, or if there is a planned change in their management regime;
- if new arrangements or facilities are to be made to accommodate relocated refugees from other camps/settlements;
- prior to repatriation and re-integration plans being agreed and action taken; and
- when rehabilitation of former camp/settlement sites is being considered.

➢ **ARE ENVIRONMENTAL ASSESSMENTS NOT MOST SUITED TO LARGE-SCALE INFRASTRUCTURE OR INDUSTRIAL PROJECTS?**

It is true that most experience relates to these types of projects. However, in recent years the application of EA has diversified significantly to cover many different kinds of proposed actions, including the siting and establishment of refugee camps and settlements.

➢ **DOES ENVIRONMENTAL ASSESSMENT REQUIRE CONSIDERATION OF MANY ALTERNATIVES?**

Ideally, if time and resources allow, it is best to consider 'reasonable' alternatives and limit the number of these to three. The ability to consider alternatives will depend on the context of an EA. During an emergency, for example, it will be difficult to give full consideration to alternatives because of competing needs and pressure: the identification of too many alternatives should therefore probably not be attempted unless conditions allow.

➤ **DOES AN ENVIRONMENTAL ASSESSMENT REQUIRE MULTIDISCIPLINARY TEAMS, LARGE AMOUNTS OF MONEY AND TIME?**

Not necessarily! The resources expended should be in line with the scale of the proposal and the time, budgetary and human resource constraints. In an emergency situation an adequate EA could be done within one week by a maximum of two specialists. Annex 1 of this Handbook contains an Environmental Assessment Report for a proposed extension to a camp in Sierra Leone that was completed within seven working days. (See also "**What Skills are needed to Implement an Environmental Assessment?**")

➤ **WHAT ABOUT THE NEED FOR CONSULTATION WITH THE PUBLIC AND OTHER INTERESTED PARTIES, THE NEED TO PREPARE DRAFT AND FINAL REPORTS WITH CONSULTATIONS IN BETWEEN? THERE IS OFTEN NO TIME TO FOLLOW SUCH TYPICAL FORMAL HURDLES IN REFUGEE-RELATED ACTIVITIES.**

Again, the EA should be tailored to the realities of the situation. Environmental assessments for new settlements, site rehabilitation and repatriation-related activities may need to comply with national laws or regulations that stipulate the timing and sequence of activities during the implementation of an environmental assessment. This legal framework is unlikely to apply to actions in the emergency phase. In such situations, EAs that do not abide by the formal procedural rules – and are therefore implemented very quickly – are likely to be acceptable. The need to comply with national requirements must, however, be checked and, if they are applicable, then any EA must abide by such requirements.

➤ **DOES THIS MEAN THAT SUCH CONSULTATIONS ARE NOT ALWAYS NEEDED?**

Absolutely not! It is essential to consult with key individuals – especially those who can represent specific groups whose interests can be affected by the proposal – as one of the first stages in implementing an EA. The aim of such consultation is to obtain information on:

- the impacts of concern (to be the basis for the EA work);
- important environmental features and trends; and
- possible alternative locations/options for a new refugee-related activity or facility.

Whether or not additional consultations are undertaken will depend on the time and resources available to the EA concerned.

➤ **WHEN SHOULD AN ENVIRONMENTAL ASSESSMENT BE INITIATED?**

As early as possible so that it can influence key decisions on the location of an activity or facility, the design and implementation of an activity, and/or the design and layout of a facility.

➤ **WHAT SKILLS ARE NEEDED TO IMPLEMENT AN ENVIRONMENTAL ASSESSMENT?**

Ideally a team of two people – one at least who has some in-depth environment-related expertise – should be able to implement most EAs. Experience in undertaking EA work is valuable, but not essential. At least one person, however, should be familiar with refugee-related actions. This individual could be a camp planner and/or engineer familiar with specific environmental issues such as water or land-use. It is advisable to try and engage at least one local specialist, given their local knowledge, probable network of contacts and linguistic skills.

In an extreme situation, one person with a broad environmental background and extensive EA experience can successfully carry out an EA using this Handbook, but such a person may be hard to find if time, especially, is a constraint.

3.   ENVIRONMENTAL ASSESSMENT BASICS

3.1   IS AN ENVIRONMENTAL ASSESSMENT REQUIRED?

It is not necessary to undertake an EA for every proposed action. Unless there is a specific legal need to carry this out, this tool/process should only be used in refugee-related operations when considered to be beneficial. Specific guidance is given below on how to decide when to implement an EA.

The laws and regulations of each country should first be checked to see if an EA is required for the action in question (Box 2) In some instances, guidance from the national agency responsible for EA – usually, but not always the ministry responsible for environmental issues or natural resource management – may be necessary.

BOX 2. LOCAL EA LEGISLATION AND REGULATIONS

Many countries have legislation that requires an EA for specific types of proposed projects. Some UNHCR refugee-related operations – such as constructing a camp – may be covered by legislation. In such cases, UNHCR should follow local EA requirements and ensure that EA work is consistent with UNHCR's policy principles and guidelines.

Some actions related with the planning, management or closing of operations may be specifically exempted from national legislative requirements. Advice on their inclusion or exemption, under national legislation, should be sought from the national environment ministry or agency. If a UNHCR proposed action were to be exempt, but an internal decision was still made to implement an EA then it should be consistent with both best international and national practice. Careful consideration should be given to providing a copy of the EA Report to the environment ministry or relevant agency for information and review. This would be to the credit of UNHCR and would show that it was committed to sound environmental management and openness in decision-making.

3.2   IS AN ENVIRONMENTAL ASSESSMENT REQUIRED IF NATIONAL LAWS DO NOT APPLY?

If national laws do not apply then UNHCR should review proposed actions against a set of qualitative or quantitative criteria: if a proposed action meets the criteria, then an EA would be required. Possible criteria include the following:

- **new camps/settlements**: all new camps/settlements with an expected population of more than 5,000 people. This includes work done as part of contingency planning to identify a site/sites for a possible refugee influx;
- **alteration in management policy, affecting an existing camp/settlement**: any change in management policy or regime that is likely to significantly change the means by which refugees sustain their livelihoods and/or significantly alters the amount or types of inputs (e.g. food, fertilizers) and outputs (e.g. food products or charcoal for sale) from the camp/settlement. An unforeseen but necessary physical extension of a camp/settlement or alteration of an existing policy that aims to make a settlement self-sufficient in food, for example, would need an EA. Judgements on which alterations in management policy need an EA, however, must be made on a case-by-case basis;
- **extension to a camp/settlement**: all extensions that that will result in an increase of more than 2,500 people. Note that this figure is lower than the criterion for a new camp/settlement because the existing camp/settlement may already be causing adverse impacts;
- **repatriation and re-integration**: all actions involving the movement of more than 5,000 people for the purposes of repatriation and re-integration;

- **land rehabilitation**: all land rehabilitation actions, covering more than five hectares, located within a refugee-affected area; and
- **new access roads**: if implemented separately to a new camp/settlement or as a result of a change in management policy.

3.3 PREPARING FOR AN ENVIRONMENTAL ASSESSMENT

3.3.1 Getting Started

This EA Handbook is designed for people – primarily UNHCR and Implementing Partner staff – with some degree of training in environmental issues or assessment methodologies. Unlike the companion volume on REA found elsewhere in the FRAME Toolkit, no time limit is attached to conducting an EA. At the same time, however, the EA team should be conscious of their demands on peoples' time and attempt to keep this to a minimum.

An EA is best completed by a **team of three or more people** – ideally at least one person representing a local NGO – preferably one with experience in environmental issues – a representative from the local community and someone from the international humanitarian community. One person should be nominated or elected as the Team Leader. Clearly, the more people, and especially those with local knowledge, involved in the EA, the more viewpoints and perspectives will be represented with regards the environment. However, a balance may need to be found between the number of people formally undertaking the EA and the number of people consulted. Too many people on the team can become a burden.

One action which underlies the successful completion of an EA is "tasking of responsibilities" – each member of the team must have clear responsibilities, be fully aware of these, and report on these regularly to the Team Leader.

Identifying and collecting required information sources before the EA actually begins will save considerable time and help formulate questions and orient meetings. Earlier findings from a REA, if one has been conducted, should serve as a useful starting point. Other suggested information sources that should be consulted and/or used during the EA are:
- background information on the state of the environment in that particular area, prior to the emergency;
- relevant maps of the area (1:25,000 or 1:50,000 topographical maps, aerial photography or thematic maps of protected areas, land use or natural resources, as well as villages, roads and the like);
- local community leaders and refugee community leaders;
- relevant local or regional technical departments (government or education institutions), to find out what, if anything, is/was being considered in terms of development or other support to that particular region. This is also the occasion to identify regulations that might affect refugee/returnee livelihoods, e.g. restrictions on agriculture or keeping livestock; and
- bilateral development or conservation agencies who may have projects planned or underway in the area or its immediate surroundings.

3.3.2 Useful Information Sources of Environmental Data

It may be useful to consult some of the several sources of environmental information, which are available via the Internet. Some relevant sources are listed below:
- FAO – United Nations Food and Agriculture Organisation (www.fao.org). This is especially useful for general information and specific data on agriculture, forestry and fisheries at the country level;
- UNEP – United Nations Environment Programme (www.unep.org);

- UNESCO World Heritage Sites (http://whc.unesco.org/);
- Ramsar Convention on Wetlands (www.ramsar.org);
- National Environmental Action Plans or Agenda 21 (incomplete collection) (www.un.org/esa/agenda21 /natlinfo);
- National Environmental Laws (incomplete collection) (www.ecolex.org or (http://faolex.fao.org/faolex);
- GCRIO – The US Global Change Research Information Office (www.gcrio.org);
- IUCN – The World Conservation Union (www.iucn.org);
- WWF –World Wide Fund For Nature (www.panda.org); and
- WCMC – World Conservation Monitoring Centre (http://www.unep-wcmc.org/).

Ministries such as the Ministry of Environment or Ministry of Agriculture are often useful first points of contact for maps, census data and information on what projects might be underway in the field of conservation.

Country maps can be downloaded from the UNHCR database (http://intranet.hcrnet.ch or www.unhcr.ch); the Population and Geographic Data Section at UNHCR HQ (HQMAP@unhcr.ch) should be consulted for more specialist information, e.g. satellite imagery.

Once the baseline data has been collected it should be integrated in a geographical information system (GIS) if one is available or being contemplated (see the **GIS Handbook** in this Toolkit for more information on this subject). Regular updating of the geographic database will allow ongoing monitoring of the environmental situation to take place over time and space. Alternatively, thematic or topographical maps (ideally at scales of 1:50,000 or 1:100,000) can be used manually to record all pertinent data. In such instances, it may also be necessary to prepare a brief accompanying text to explain some of the mapped features and to present data that cannot be mapped.

Information collected from these various sources will guide the EA team in their assessment, helping them identify the country's most critical environmental issues and the national measures already in place to respond to these problems. Collection of such information will also be of great value when designing an Environmental Action Plan for refugee camps or settlements. The choice of partners and introduction of norms and solutions to some environmental problems should be easier to make using the information gathered through the EA.

3.3.3   Organising the Environmental Assessment Process

An EA process can have many starting points. It might, for example, follow directly on the heels of a REA, or it might be initiated by UNHCR (HQ, Branch Office or Field Office, or by an individual Programme Officer or Environmental Focal Point), by a concerned implementing partner, by government or even by a community who fears that it will be affected by decisions being taken.

> **GETTING ORGANISED**
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> Useful tips on preparing for and organising meetings and conducting or facilitating discussions are also examined in the **Community Environmental Action Planning** module of this Toolkit.

If a decision to carry out an EA has been taken, but no contact has been established with UNHCR up to this point, it is recommended that this be carried out now, and communication lines kept open throughout and following the EA. While it might be advantageous, it may not be necessary or appropriate for a UNHCR representative to be part of the EA team. Also, given that UNHCR human resources and expertise may not always be at hand at the time of an emergency, it is recommended that technical experts from various in-country ministries are involved in the EA. This will not only facilitate

the collection of pertinent information but will also give an opportunity to weave relationships with government and local counterparts.

Once a decision has been taken to undertake an EA, and permission to do so received from the necessary authorities, someone must take the lead in identifying the team members. The "ideal" team size is 3-5 persons: although the EA could be undertaken by one person, an individual viewpoint could easily result in a narrow or biased perspective of the environmental situation and concerns. As more people become involved in the process, it should also take less time to collect background

> **BEFORE CARRYING OUT AN EA:**
>
> a) **Plan the process**: define its objectives and the key issues it might address; identify and commission the team; prepare clear Terms of Reference for each team member; identify information needs and possible sources;
> b) **Assemble resources needed**: make logistical arrangements; obtain permission and security clearance; recruit support staff; and interpreters; secure necessary equipment e.g. a global positioning system (GPS); and
> c) **Gather relevant information** (see Box 3).

information, talk to local and refugee representatives, analyse the results and devise a follow-up action plan. Gender balance should also be taken into consideration on each occasion an EA is conducted.

> **BOX 3. GATHERING INFORMATION**
>
> While a thorough understanding of how communities interact with their surroundings would require much more time than is normally allotted for an EA, as with all other issues addressed during this process, considerable information can nonetheless be obtained. The most appropriate means of gathering information is through discussions with:
>
> - Women, who are generally responsible for tasks such as fetching water, collecting firewood and wild plants, cooking, gardening and caring for domestic animals. One should not underestimate the knowledge that women have in agriculture, as part of their responsibility is to assist their family in the field. Some might even engage in economic activities and market their products;
> - men, who can provide valuable information on crop cultivation, management of natural resources and livestock keeping;
> - elders of the community are often particularly valuable sources of information when it comes to identifying trends in the availability of natural resources, to the extent even of being able to identify those which are no longer present in the area, and to account for the underlying reasons for this; and
> - nomads, if present in the area, also have a very good knowledge of their environment because of their reliance on natural resources, as well as their mobility. Their perspectives may help provide a broader perspective on changes that have occurred in recent years with regards the natural environment.

Once a team has been appointed, a simple strategy should be discussed on how to proceed. The following pointers might prove useful with this and subsequent application of the EA:
- appoint/nominate a Team Leader for the duration;
- establish clear terms of reference for the EA, with specific responsibilities identified for each team member;
- thoroughly brief team members at the outset;
- draw up a provisional list of people/agencies to meet: divide this task among team members if appropriate;
- arrange, in advance, fixed times to meet with all team members, to debrief and plan;
- in researching, meetings and interviews, aim for quality detail rather than amassing bulk information;

- keep meetings focused by having a predetermined set of questions, but do allow time for people to express their concerns;
- organise for site visits to take place; engage in local consultations (see Box 3);
- perform regular cross checks of the information being gathered to verify findings, or spot discrepancies;
- record all information as you go: do not commit responses or observations to memory alone;
- prepare a final report and present findings and recommendations; and
- establish a Task Force to follow-up on recommendations.

4. CONDUCTING AN ENVIRONMENTAL ASSESSMENT

4.1 INTRODUCTION

There are **eight main tasks** to be addressed when undertaking an EA, as shown below:
Task 1 – Characteristics of the Proposed Action
Task 2 – Identify Impacts of Concern
Task 3 – Describe the Baseline Conditions
Task 4 – Predict Impacts
Task 5 – Assign Significance
Task 6 – Environmental Action Plan
Task 7 – Reporting
Task 8 – Decision-making

The amount of time and resources available will of course vary according to the type of proposed action being assessed – limited time, but the possibility of having more resources available are characteristics often noted during an emergency response, while more time and fewer resources are likely scenarios concerning later extension to an existing camp or settlement.

4.2 TASK 1 – CHARACTERISTICS OF THE PROPOSED ACTION

The proposed action must first be described, following which reasonable alternatives should also be identified. No more than three alternatives should be considered: in some cases there may only be one alternative.

> ***Task 1 – Characteristics of the Proposed Action***
> Task 2 – Identify Impacts of Concern (Scoping)
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> Task 8 – Decision-making

The description must include not only the proposed action, but also all associated infrastructure such as access roads, logistical arrangements such as the transportation and storage of goods (all seasons), the available water supply (e.g. the need to drill boreholes, construct a pipeline or transport water by tanker), existing infrastructure, the need for additional schools and clinics for refugees and perhaps those to be provided to the host community, as well as the environmental conditions and resources in the immediate area. Box 4 provides an indication of the type of information needed to enable the proposed action to be elaborated and recorded.

4.3 TASK 2 – IDENTIFY IMPACTS OF CONCERN (SCOPING)

The objectives of a scoping exercise are to ensure that:
- no important potential impact has been omitted;
- possible alternatives are identified or, if this is not the case, to confirm that no better option exists;
- useful local data is obtained

> Task 1 – Characteristics of the Proposed Action
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> Task 7 – Reporting
> Task 8 – Decision-making

on the environment and on other current or intended projects that may affect the existing

environmental situation in the near future (see Task 3 – **Describe the Baseline Conditions**); and

- local views (from authorities and local communities) are obtained on the desired after-use for the site/facilities.

BOX 4. TYPICAL INFORMATION REQUIRED TO DESCRIBE A PROPOSED ACTION

During construction of a new camp, or when planning repatriation, the following information is among that required:
- location and characteristics of associated infrastructure (roads, boreholes);
- time period for construction (camp/settlement and infrastructure);
- land take – the physical area to be taken into consideration for the camp/settlement;
- raw material inputs (type, amount and means of transport);
- number of workers employed; and
- wastes generated (e.g. solid, liquid) and means and place of disposal.

During the operational phase, when a camp/settlement is in use, when a new management policy might be being considered, or when re-integration is taking place, information such as the following is needed:
- estimated time period;
- raw material inputs (type, amount and means of transport);
- number of workers employed;
- wastes generated and means and place of disposal;
- type and characteristics of environmental projects that may be initiated before or soon after the camp/settlement becomes operational; and
- rehabilitation objectives in terms of after-use and methods. If these are not already known, they should be considered at this stage.

This activity is very important as it identifies the impact issues to be investigated later in the EA process. Scoping specifically requires those undertaking the EA to:
- carry out a site visit and consult maps (especially topographic maps at 1:50,000 scale) and other aids such as aerial photographs and satellite images to begin to assess the situation and form a view of likely significant impacts;
- consult with local specialists (e.g. forestry, agricultural, environment/natural resources and planning officers working at the local level);
- identify and obtain copies of reports on the area, in particular for hydrological and environmental information, but also to determine whether the region is included in the country's development programme; and
- consult with other stakeholders.

During the site visit (see Box 5), maps, aerial photos and satellite images – if available – can be checked for accuracy and differences noted. The following aspects should also be examined:
- physical location of site in relation to other towns (markets) and infrastructure;
- land-use patterns – especially farming (crops and grazing) patterns, local settlements, the location and state of roads and/or possible airstrips;
- surface water bodies, watershed condition and drainage patterns;
- slopes and predominant geology;
- vegetation type and coverage;
- location and type of main habitats (e.g. wetlands, forest, savannah);
- protected areas and other reserves (including those of local significance), including the dominant flora and fauna, as well as the presence of any threatened species or species of important cultural, social or economic importance;
- local cultural practices and predominant uses for natural resources; and
- proximity of sites of cultural, historical or spiritual importance.

Stakeholders are individuals or organisations whose interests may be affected by an activity and/or who have influence or the power to affect the proposed activity. Typical local stakeholders are:

- local communities – single villages or groups of villages which share a common cultural identity. Traditional leaders or representatives on community-level bodies, such as ward councils, can be consulted to obtain a community viewpoint;
- non-resident social groups who may use local resources, either regularly or intermittently, for example pastoralists;
- selected vulnerable social categories, for example, women, the elderly and the poorest people;
- religious leaders;
- politicians; and
- NGOs and voluntary organisations such as local community development or resource user's groups, gender-based groups, labour unions and co-operatives.

BOX 5. SCOPING IMPRESSIONS FROM A RAPID SITE VISIT, UGANDA

A site visit of even a few hours can provide considerable information on likely impacts, especially if a good map of the area is available. During the preparation of a preliminary EA for a proposed new settlement in Uganda, a site visit was conducted by three specialists in a period of only two hours. Given the remoteness of the site, only one local stakeholder could be consulted.

A hand-drawn map of the area was the only guide available to the specialists at the time. Nonetheless, the visit enabled the following potential impacts to be identified as needing further investigation:
- growth of nearby local communities and attendant socio-economic and land-use change;
- changes in surface water systems (river and associated small streams) as the settlement would be located in a very shallow valley with a river at the base);
- downstream effects on those using the river;
- effects on groundwater recharge rates if boreholes were to be used for water supply; and
- damage to sites of cultural importance.

Possible impacts that were assessed to not likely become significant, and thus did not require any detailed study, were:
- changes to the local wildlife;
- noise and air pollution:
- soil erosion;
- socio-economic impacts arising from natural resources being used by refugees to the detriment of local people; and
- deforestation.

Non-local stakeholders might include:
- central ministries or departments whose remit and responsibilities includes areas and sectors likely to be affected – such as those responsible for health, natural resources and land-use;
- local government; and
- private sector bodies such as professional societies, trade associations and chambers of commerce.

Some consultations can be carried out during the site visit. Others may be undertaken in a nearby town or in the capital. Throughout this stage, however, it is important to take time to carefully explain the characteristics of the proposed action to the stakeholders concerned.

To assist further with the process of **impact identification**, users should refer to the checklist in Box 6. Also included here are some possible threats and benefits that could result from an area

hosting refugees. It is essential that all such aspects are considered in each EA as many opportunities can be overlooked, proving costly or time demanding to address at a later stage. Note, however, that **this information must be used as a guide only: it is crucial that the impact (and threat) identification process is tailored to the specific proposal and its location via scoping**.

BOX 6. CHECKLIST OF TYPICAL IMPACTS AND POSSIBLE THREATS AND BENEFITS FROM REFUGEE-RELATED ACTIONS	
Typical impacts from refugee–related actions	**Threats to refugees and host communities**
1. Changes in woody vegetation cover (woods and forests where fuelwood might be obtained). 2. Changes to the main habitats and valued species of flora and fauna. 3. Changes in erosion patterns and sediment levels in water bodies. 4. Changes in access to, and local uses of, land and other natural resources (local sedentary communities and pastoralists). 5. Socio-economic changes in host communities and possible range of indirect environmental impacts. 6. Changes to groundwater levels. 7. Changes to surface and groundwater quality. 8. Induced development and subsequent range of impacts. 9. Changes to cultural resources (sites, buildings and valued landscapes or features). 10. Increase in demand for local infrastructure (schools, clinics…).	1. Delivery to refugees of sufficient drinking water and water for other uses is not sustainable. 2. New demands on water reduce access and supply for local people. 3. Soil fertility levels cannot be maintained for agricultural purposes. 4. Non-sustainable supply of woody vegetation. 5. Encroachment on allocated land by host population. 6. Competition for natural resources reduces livelihood potential of local people. 7. Increased indoor air pollution from burning low quality fuel, as available fuelwood resources decline. 8. Restricted access to local infrastructure (schools, clinics…) because of priority given by government to host communities, and resulting impacts on education and health.
	Potential benefits to refugees and host populations
	1. New infrastructure. 2. Increased economic activity, opportunities and jobs. 3. Improved markets. 4. Opportunity for more focused land-use planning.

Refugee camps and settlements, as well as repatriation and re-integration activities not only cause direct environmental impacts, but can also create indirect impacts as a result of induced development. The potential of this occurring must be taken into account during the scoping exercise.

Depending on the location of the site(s) and access to transport networks, the presence of a refugee camp/settlement may lead to an increase in economic activity. In such situations, refugees (or returnees) – who as well as often providing a local work force can also prove to be quite enterprising – as well as agencies providing assistance can trigger additional development in the immediate vicinity. Migrants as well as communities living in unfavourable conditions are attracted from other areas as there is the prospect of work, opportunities to increase their income through trading, and possible easier access to better social infrastructure. This continuing process is referred to as "induced development" and may have an adverse impact through the – often quite sudden – growth in population and changes in the livelihood patterns of local people.

The management of such induced development impacts requires discussions and agreement with local authorities on the need to manage the expected growth in line with economic development and environmental policies in their development plans.

Another example of possible impacts from a refugee-related action is given in Box 7, this time in relation to the construction of a new access road. Although many of the impacts are similar to the previous case, there are considerable differences in the perceived threats and possible benefits that may accrue to refugees and host communities.

BOX 7. SOME IMPACTS AND THREATS AND BENEFITS THAT MIGHT BE EXPECTED AS A RESULT OF NEW OR IMPROVED ACCESS ROADS	
Typical impacts from access roads	**Potential threats to refugees and host populations**
1. Changes in erosion patterns and sediment levels in water bodies. 2. Changes in access to, and local uses of, land and other natural resources (local sedentary communities and pastoralists). 3. Socio-economic changes in host communities and possible range of indirect environmental impacts. 4. Changes to drainage patterns and indirect environmental impacts. 5. Changes to surface and groundwater quality. 6. Induced development and subsequent range of impacts. 7. Changes to cultural resources (sites, buildings and valued landscapes or features). 8. Increase in demand for local infrastructure (schools, clinics...).	1. Contamination of water bodies and a reduction in the benefits obtained from such resources. 2. Fewer options for the delivery of sufficient safe drinking water and water for other uses. 3. Increased traffic and higher speeds might result in more road traffic accidents and increased numbers of injuries and even deaths. 4. Restricted access to local infrastructure (schools, clinics) because of priority given to host communities and resulting impacts on education and health. 5. Increased transmission of certain diseases if habitats suitable for vectors are created by road construction and/or maintenance (e.g. borrow pits filling with water providing habitat for *Anopheles* mosquitoes).
	Potential benefits to refugees and host populations
	1. Increased access to markets and increase in per capita incomes for some families. 2. Increased access to schools and clinics leading to improved educational levels and better health status for locals.

The scoping results, especially the expected likely significant impacts to be investigated, must be written down and used as the basis for subsequent work. It may be useful to incorporate these into a revised **Terms of Reference** for the EA (see Box 8).

4.4   TASK 3 – DESCRIBE THE BASELINE CONDITIONS

The main characteristics of the existing environmental situation – "baseline condition" – need to be known so that the predicted impacts can be compared with them. Only information directly related to the impacts identified in Task 1 is needed for this purpose so it is important to collect only essential data.

> Task 1 – Characteristics of the Proposed Action
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> ***Task 3 – Describe the Baseline Conditions***
> Task 4 – Predict Impacts
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> Task 8 – Decision-making

It is likely that the current environmental conditions, at the time of the EA, will still exist when the proposed action is implemented. In most cases the two situations will be the same, but this must never be assumed. It must be demonstrated to be the result of a systematic analysis. Therefore, it is necessary to consider the following factors:

- the current environmental situation;
- current and expected trends affecting the environment (e.g. deforestation rates);
- possible effects of development proposals already being implemented on the existing situation; and
- possible effects of other development proposals which will be either underway or completed before implementation of the proposed action.

BOX 8. TERMS OF REFERENCE (ASSUMING SCOPING HAS BEEN IMPLEMENTED)

Typical Terms of Reference for an EA (see also Annex II) will include the technical tasks outlined below. Depending on the time available some of these items can be omitted with the focus remaining only on the likely impacts and their mitigation. In these situations, the aspects to be included in the Terms of Reference are shown below in bold italics. Otherwise, all of the following should be addressed.

- Describe, briefly, the institutional and policy framework for the area likely to be affected.
- ***Describe the characteristics of the proposed action and the alternatives (if relevant and then only key differences between the alternatives).***
- ***Describe, briefly, the general state of the environment and the main trends which are obvious or which emerge from consultation.***
- ***For each impact to be predicted obtain the necessary baseline data. If there are any gaps these should be identified and the importance of these gaps for the EA noted.***
- ***Predict the impacts for each alternative.***
- ***Identify significant beneficial and adverse impacts using a clear set of criteria.***
- ***Formulate mitigation measures to prevent or reduce the adverse impacts and to enhance beneficial impacts.***
- ***Identify the residual impacts, after mitigation, and compare (if relevant) alternatives and select preferred alternative.***
- Prepare an environmental action plan, for selected alternatives, with required mitigation and monitoring measures to be implemented prior to initiating actions, during site preparation and construction, during operations and management, and actions to be taken to rehabilitate the site once vacated.
- Provide an account of stakeholder consultations.
- ***Prepare and submit the EA Report.*** (Note: The timing for the delivery of the EA Report must be specified in the Terms of Reference.)

The result of this analysis will be a projected "picture" of the environmental situation, taking these factors into account. This picture must be used to assess the impacts.

There may be some circumstances in which the collection of data will not be possible and the EA specialists will have to use their own judgement. When this occurs, critical data gaps must be indicated in the EA report and an explanation provided. It is important to know areas of uncertainty, as there are implications for impact monitoring (see *Task 6 – Environmental Action Plan, Monitoring*).

4.5   TASK 4 – PREDICT IMPACTS

An impact can be considered as the change in an environmental factor, e.g. water quality over a specified period and within a defined area, resulting from a particular action. Impacts occur in space and over time and vary in terms of key characteristics such as:

Task 1 – Characteristics of the Proposed Action
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Task 7 – Reporting
Task 8 – Decision-making

- nature (beneficial or adverse);
- magnitude (scale of difference between the current and predicted status of an environmental factor);
- extent/location (area/volume covered, distribution);
- timing (during construction, operation, immediate, delayed, rate of change);
- duration (short-term, long-term, intermittent, continuous);
- reversibility/irreversibility; and
- likelihood (risk, uncertainty or confidence in the prediction).

Once impacts have been identified, the potential characteristics of each must be predicted and described. When time and resources are restricted most prediction will be based on expert judgements. There are, however, some structured approaches that can be used for key issues, for example, calculation of the likely demand by refugees for timber for building materials and fuelwood, and the ability of forests to provide a sustainable supply.

Table 1 shows a worked example of how information on these impact characteristics can be summarised during EA work. Information such as this can be particularly helpful as a source of information on impacts when decisions have to be made on the significance or importance of each impact.

TABLE 1. EXAMPLE OF IMPACT CHARACTERISTICS

Impact characteristics	Impact – Reduced water quality because of an increase in faecal coliforms in the river (no mitigation measures)
Nature	Adverse as it is a health hazard
Magnitude	Coliform count is expected to double and increase further if more refugees arrive
Extent/location	A stretch of river approximately 500m long will be affected (will increase in length if more refugees arrive)
Timing	Will occur three months after the camp is occupied at the planned density
Duration	Will remain while the camp is occupied
Reversibility	Once the camp ceases operation the pre-camp situation may be obtained without the need for rehabilitation work
Likelihood	Definitely expected to occur

4.6   TASK 5 – ASSIGN SIGNIFICANCE

Once the impacts have been described, it is important to determine their significance, that is, whether they are acceptable or unacceptable and thus require mitigation. The significance of an impact is determined by considering the impact

Task 1 – Characteristics of the Proposed Action
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Task 5 – Assign Significance
Task 6 – Environmental Action Plan
Task 7 – Reporting
Task 8 – Decision-making

characteristics and the importance (or value) attached to them by key stakeholders (see Box 9). (Note: guidance on stakeholder prioritisation is described in more detail in Annex I of the **Community Environmental Action Planning Handbook** in this Toolkit.)

BOX 9. IMPORTANCE OF STAKEHOLDERS IN ASSIGNING SIGNIFICANCE – THE DANGER OF IMPOSING AN EXTERNAL VIEWPOINT

In Nepal, a large water supply project involving the creation of dams and reservoirs and a supply network was subject to an EA. The EA team was predominantly non-local. A number of significant social and environmental impacts were predicted. In the EA, considerable efforts and ingenuity were spent trying to mitigate the adverse impacts and to obtain benefits from the opportunities to be created by the project.

One idea was to use some of the stored water to alleviate the pollution problem of the Bagmati River in Kathmandu. In the dry season, this river's flow is at its lowest and pollution is at its worst, partly because it is more visible. The proposal was to release water into the Bagmati during the dry season, thus reducing the pollution. While this was seen as a significant benefit by the EA team, it was seen as a significant adverse impact and was opposed strongly by the Hindu community as the Bagmati is a sacred river, flowing into the Ganges, and could not be contaminated by water from a different catchment.

There are two main approaches and criteria for assigning significance:

- professional judgement by the EA team based on the analysis of the characteristics of each impact (compared with the existing environmental situation) and taking account of:
    a) the level of public concern, particularly over health and safety; and
    b) the input from stakeholders during Task 1 (**Characteristics of the Proposed Action**) and any additional views from local and non-local stakeholders obtained during the EA.

- comparing predicted impacts with current legal requirements, national and local policies, and priorities and standards. If the proposal, including the adopted mitigating measures, causes a legal requirement to be breached, a policy to be compromised or a standard to be exceeded, then the impact is significant.

It is critical in terms of the sustainability of settlements to determine whether there will be any long-term threat to them as a result of the expected impacts. For example, the uncontrolled use of water resources, vegetation clearance in the vicinity of surface water (causing erosion and increased sediment input) and/or poor waste management practices might result in reduced levels of drinking water being available for the camp/settlement.

The next step is to ascertain the distribution of impacts, particularly in terms of defined local communities. This can be done using the maps used earlier in the EA. Mapping the distribution of the impacts enables potential areas of concern to be identified and any overlapping of impacts to be assessed. Through this approach, it is possible to see who might benefit and who might

suffer – information that is a useful basis for the design of mitigating measures, mechanisms to enhance benefits and monitoring programmes. (Note: The **Environmental Mapping** section of the **Community Environmental Action Planning Handbook**) provides information which might also be useful in this instance.)

Throughout the EA work there should be continuing interaction with camp/settlement planners and managers. As soon as significant adverse impacts are identified, discussions should be held to see if their impact can be reduced or even eliminated through changes in design, location or operation. It may become clear, however, that certain impacts can only be mitigated, at an appropriate time, during construction and operations.

The focus of mitigation is on significant adverse impacts. Once these have been dealt with then attention can be turned to impacts that are adverse, but not considered to be significant. Some of these may be mitigated easily, but others may not. Decisions on this matter will be specific to a particular refugee-related action and will take account of issues such as costs, the views of the stakeholders and practicality. Also, attention should focus on beneficial impacts and ways of making the best use of opportunities created by refugee-related operations.

4.7 TASK 6 – ENVIRONMENTAL ACTION PLAN

If time allows it is useful to prepare an environmental action plan. The prevention, or management and control, of impacts depends on the implementation of mitigation and monitoring measures at the correct time, in the correct way, and at the correct place. The

> Task 1 – Characteristics of the Proposed Action
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> Task 5 – Assign Significance
> ***Task 6 – Environmental Action Plan***
> Task 7 – Reporting
> Task 8 – Decision-making

process of impact management needs a simple environmental action plan and has three basic phases:
- implementation of mitigation measures;
- monitoring/evaluation; and
- revision of the plan, using the results from the previous monitoring and evaluation phase.

This process may be in operation for a considerable period of time, but the amount of work related to implementing the process varies from time to time.

Impact management requires most, if not all, of the elements described below to be in place.

4.7.1 Mitigation Measures

The characteristics of the mitigating measures to be implemented for the target impacts will be specified in the environmental action plans, as follows:
- description of the mitigation measure;
- time/place for implementation;
- expected results;
- responsibility for implementation (named individual(s) in UNHCR and/or implementing partners);
- monitoring strategy needed to check on implementation and level of performance success; and
- reporting procedures within UNHCR and/or implementing partners, and to a community liaison committee, such as an Environmental Working Group (EMG), if formed.

4.7.2   Monitoring Schemes

Two main types of monitoring (see also Section 4 of the **Community Environmental Action Planning Handbook**) can be undertaken:

* mitigation monitoring as a check on whether mitigation actions have been implemented in accordance with an agreed schedule, and are working as expected; and
* impact monitoring, focusing on the scale and extent of the actual impacts of the action.

Monitoring is of particular importance if there is uncertainty concerning the scale and significance of one or more adverse impacts. Interpretation of the monitoring data can function as an early-warning system, indicating if an impact is occurring and allowing action to be taken to remedy the situation if data show the existence of a trend likely to result in an unacceptable impact in the near future.

Careful thought is needed before monitoring recommendations are formulated. Monitoring can be expensive, particularly in relation to ecological impacts. Therefore, it is important that consultations take place between UNHCR and/or its implementing partners, local government and, when appropriate, representatives from the refugee and host community/communities to discuss necessary impact monitoring. Important issues to be considered include:

* identification of impacts to be monitored, in priority order;
* design of an appropriate monitoring programme for each identified impact;
* likely duration of the individual monitoring programmes;
* the institutional system by which monitoring data will be collected, collated, analysed, interpreted and action taken, if necessary, to prevent or reduce unwanted impacts; and
* the cost of overall monitoring recommendations.

BOX 10. REFUGEE AND HOST COMMUNITY RELATIONS

Relations between local, host, communities, refugees/returnees, and national and international agencies involved in humanitarian operations is recognised as an important aspect of successful camp and settlement management. In some situations, refugees settle quickly and easily into the surroundings, with no evidence of social tension. In others, however, problems can emerge.

Conflicts, including those over access to and use of natural resources, can make the provision of care to refugees more difficult and expensive. In one instance, local people lost agricultural land to refugees who had been moved into the locality from an existing camp. Local people were not consulted on this matter and compensation for the loss of land was not deemed adequate. With time, a river flowing by the camp became polluted, preventing local people from using its resources as they had in the past. Competition also developed between the refugees and locals for building and thatching materials growing outside the camp boundaries.

Three years after the arrival of the refugees in this region, tensions were so high that attempts were finally made to create links between the refugees and local people to help them implement projects and activities that would benefit both communities and reduce the pressure on local natural resources.

(Note: Further guidance on conflict resolution is given in the **Community Environmental Action Planning** module of this Toolkit.)

Choosing the right and most appropriate indicators on which to base a monitoring exercise is also vital. Guidance is provided on this aspect in Section 4 of the **Community Environmental Action Planning** module in this Toolkit.

4.7.3 Liaison Arrangements with Local Government Bodies and Representatives of Local Communities

Impact management is undertaken to protect the environment and the interests of refugees, returnees, the host community and refugee-related agencies. It is increasingly important that impact management programmes are socially responsive (Box 10). For this, it is useful to initiate a forum such as an EMG whereby the local community or communities, refugees, UNHCR and/or its implementing partners as well as local government agencies can meet to discuss issues and problems and agree on possible solutions. Recommendations on community liaison arrangements should then be incorporated into the environmental action plans. Further information on such plans are given in UNHCR's (1996, 2005) **Environmental Guidelines**, the **Community Environmental Action Planning** module of this Toolkit, or can be requested directly from the Division of Operational Services at UNHCR Headquarters.

4.7.4 Review of Performance and Possible Revisions to the Action Plan

An action plan should include provisions for its review and possible subsequent amendment. A schedule for review should be incorporated. It may be that some impacts are mitigated successfully, while successful monitoring may reveal that some of the expected significant impacts did not occur. In such a situation, these impacts could then be removed from the plan.

On the other hand, new environmental issues and problems may also arise. If this is the case, these should then be incorporated into a revised plan with details elaborated of the actions that need to be taken to deal with them. Through such a revising process, the plan might shift emphasis from a means of managing impacts to one that establishes environmental improvement objectives and associated indicators so that performance in achieving the objectives can then be evaluated.

4.8 REPORTING

A report should be prepared once an EA has been completed. In the emergency phase there will be little time for this job, but it is nonetheless essential to commit the EA results to paper. **Such a record is the only agreed reference to guide post-EA actions**. Box 11 indicates the essential contents of

> Task 1 – Characteristics of the Proposed Action
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> *Task 7 – Reporting*
> Task 8 – Decision-making

an actual EA Report (see also Annex I for an example of an EA report from Sierra Leone).

Reports should be short and concise, with maximum use made of visual aids such as maps, photographs and other images, diagrams and charts. The style should be non-technical and easy-to-read. A short non-technical or executive summary can be useful, especially if further consultations are likely to be based on the EA report.

If time allows it might be useful to produce a draft EA report to first allow stakeholders to comment and offer an opinion before the final version is produced. There are, however, cost and resource implications to this option as it might be necessary to translate it into local language(s) and to organise ways in which non-literate people can be included in the consultations.

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│ BOX 11. CONTENT OF AN ENVIRONMENTAL ASSESSMENT REPORT                         │
│                                                                               │
│ At a minimum, an EA report should contain the following sections:             │
│ •  proposed action and justification – including alternatives if relevant;    │
│ •  government policies for the site and surrounding area;                     │
│ •  existing environmental situation;                                          │
│ •  identification, prediction and evaluation of impacts – for each alternative│
│    if relevant;                                                               │
│ •  proposed mitigation actions;                                               │
│ •  residual impacts;                                                          │
│ •  comparison and selection of preferred alternative(s);                     │
│ •  an environmental action plan – if only a list of mitigation and monitoring │
│    actions; and                                                               │
│ •  an account of stakeholder consultations – a brief summary, listing only    │
│    main points and identifying those people consulted.                        │
│                                                                               │
│ Any detailed descriptive or analytical material can be included in annexes,   │
│ along with a glossary, references to written sources used in the EA, and the  │
│ names and affiliations of the authors.                                        │
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4.9   TASK 8 – DECISION-MAKING

Environmental assessments must be initiated as early as possible in a refugee or returnee operation so that preliminary results can be linked to other work being planned or implemented at the same time (such as site planning and engineering work). Only in this way can environmental considerations be used to shape and influence decisions.

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┌─────────────────────────────────────────────────────┐
│    Task 1 – Characteristics of the Proposed Action  │
│    Task 2 – Identify Impacts of Concern (Scoping)   │
│    Task 3 – Describe the Baseline Conditions        │
│    Task 4 – Predict Impacts                         │
│    Task 5 – Assign Significance                     │
│    Task 6 – Environmental Action Plan               │
│    Task 7 – Reporting                               │
│  Task 8 – Decision-making                           │
└─────────────────────────────────────────────────────┘
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Once the results of the EA are made available, decisions will need to be made by UNHCR and central/local government agencies on whether the proposed action can proceed and, if so, in what form.

5. THE USE OF AN ENVIRONMENTAL ASSESSMENT TO IDENTIFY SITES FOR CAMPS AND SETTLEMENTS

5.1 INTRODUCTION

Negative environmental impacts often stem from the choice of a site(s) for refugee camps and settlements, as well as when choosing locations for returnees to settle. The need for sites can occur at any time and is a critical point at which the consequences of "getting it right or wrong" can be either beneficial or adverse for the refugees and host population. Once actions have been taken on the basis of decisions made concerning the identification and selection of sites, it is often difficult to reverse them.

The guidance outlined below (and in Boxes 12 and 13) indicates additional elements and considerations that are needed when applying an EA to site selection. This guidance does not present a complete approach to all site selection work but draws attention to key, common components and concerns that may need to be addressed.

BOX 12. UNHCR GUIDANCE ON CAMP SITING AND PLANNING IN RELATION TO THE ENVIRONMENT

UNHCR does not select camp or settlement sites as *per se* this is the responsibility of national governments. Nevertheless, UNHCR may suggest sites and try to influence the opinions of government, using the results of planning work, incorporating the results from an EA, to select a site that is in accordance with the results of UNHCR own or joint analyses.

Consideration should be given to the following guidelines, but with a clear understanding that local conditions may result in modifications being needed.

- Camps should be located at least 15km, or a one-day return walk, from the nearest boundary of a protected or ecologically significant area. This distance will be determined by terrain and vegetation characteristics and should be estimated – for the search area – by reference to maps and other sources of information.
- If refugees are likely to be dependent on natural resources then any single camp population should not exceed 20,000 people.
- To encourage successful environmental management in camps it is recommended that shelter areas are clustered into smaller social groupings where each family receives a family plot of at least 200-300m^2.
- Camps should be located at least 15km, or a one-day return walk, from each other. This distance will be determined by terrain and vegetation characteristics and should again be estimated from reference to maps and other sources of information.
- Camp siting should be integrated, to the extent possible and practicable, with existing infrastructure provision so that camp assets such as cleared land and water supply points may be used by local people if local and national government policies support such after-use by local people.

Although not recommended, specifically, by UNHCR it is often suggested that camps should be located at least 50km from a recognised international border.

Source: based on UNHCR, 1998, but amended to take account of recent experiences

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The time available for site identification varies, but in many cases there is sufficient time to undertake a systematic and structured EA of proposed sites. The aim of the assessment remains to ensure that minimum damage is caused and that opportunities to maximise the welfare of the refugees and the host population, and protect the natural environment and ecosystem services, are maintained.

5.2 **APPLYING THE ENVIRONMENTAL ASSESSMENT TOOL**

Four steps, each closely linked to the others, should be undertaken.

Step 1

Determine the boundaries of the area within which it is expected that site(s) will be identified – the "search area". Such information is likely to be available from within the team undertaking the contingency planning. Alternatively, the person undertaking the EA work should identify the boundaries in consultation with colleagues.

If possible, precision measurements should be taken using a global positioning system, which allows the digital co-ordinates to be transferred to paper, thereby establishing the first elements of a map of the area. Alternatively, if detailed topographic maps are already available, co-ordinates can be superimposed on these. In the absence of such information, a basic sketch map clearly showing the main boundary limits should be made by the EA team.

BOX 13. PROTECTED AREAS AND ECOLOGICALLY AND CULTURALLY IMPORTANT SITES

Several types of protected areas can be identified. Some such areas are protected by national law – the boundaries of which are usually announced in an official government publication – in many countries in the "Gazette", hence the use of the term "gazetted area". Among the most commonly found protected areas are national parks, forest reserves and hunting reserves, although there are many more formal classifications.

Other important areas are those protected by the traditional or customary laws of local societies. These may or may not coincide with official protected areas and the number of people knowing of their existence may be considerably fewer. Careful investigations are therefore needed to identify such areas – some of which are sacred or holy sites or natural structures – as they may not be recorded in writing.

In addition to the above, recognition should be given to vulnerable or sensitive ecological areas which may exhibiting certain geological features, types of habitats, or landscapes that are:
- valuable sources of natural products used by local people, e.g. transition zones between forests and savannah;
- the source of inputs or services that enable valued species to exist – a river flowing into a lake that supports an important fishery, for example;
- the focus of local cultural and religious activities;
- important because of their historical and cultural associations – a source of local pride;
- hazardous (e.g. earthquake area) and therefore posing a threat that can be increased by inappropriate land uses; and
- the focus of national or international policy priorities, such as mangroves and tropical rainforests.

Such areas have considerable value to different levels of society, but may receive no protection. However, damage to any such area can have potentially serious consequences on the livelihoods of local communities.

Step 2

Once the boundaries for the assessment have been defined, the next step is to formulate realistic assumptions about the type of camp(s) or settlement(s) that will be established. During an emergency, there will be considerable uncertainty involving the timing of influx, the number and

composition of refugees (and possibly even their livestock) and the resources available to provide the necessary assistance. Nevertheless, an attempt should be made to identify and describe the type and size of camp(s) or settlement(s) envisaged, while at the same time acknowledging the uncertainties.

Lessons derived from previous experience with site selection and planning should be consulted and used to form an idea of the characteristics of the camp(s) expected to be established (see Box 12).

When considering the characteristics of a new camp or settlement it is necessary to consider the need for associated infrastructure such as boreholes and access roads. Similarly, the terrain of the search area might require camp managers to obtain water, fuelwood and construction materials by road transport – all of which may result in an increase in heavy goods vehicle movements. Such factors should also be integrated into EA work.

Step 3

Next, it is necessary to identify and map the characteristics of the search area. For this, it is crucial to include important environmental, infrastructure and social aspects, incorporating not only those existing at the time of the EA, but also government objectives and policies that are currently affecting the area and which may affect it at some time in the future – such aspects can, for example, act as constraints to siting camps or settlements. It is best that any intervention taken is in line with such policies or, at least, does not make it more difficult to implement the policies.

Particular attention should be given to identifying the presence of any protected areas or vulnerable ecological sites. The checklists provided in Annex III will help identify such areas, the intention being to avoid damaging them for environmental, social as well as economic reasons. When using these checklists it might be helpful to tick the boxes to enable a quick summary to be made of the results of the analysis of constraints. A brief written record of this assignment is also necessary to complement the completed checklists.

Once any protected and/or vulnerable areas has been identified and located on a map it is necessary to add other important information on the environmental, infrastructure and social characteristics of the area being searched for sites. This information should include future local and national government objectives for the search area – there might for example be an initiative to assist community development by encouraging ecotourism, the success of which would quite probably be threatened by an ill–informed siting decision for a refugee camp or settlement.

Finally, it might be appropriate to incorporate an analysis of inter-ethnic relations in the area, taking into account both historical and regional aspects, particularly with reference to access to, and use of, natural resources. This will help to determine the scope for social or ethnic tensions if refugees are introduced to the area in question.

Step 4

Reviewing the information gathered from the above, the search area should now be examined to determine if a camp or settlement can be physically sited in the area in terms of the known constraints. There are three possible outcomes – either:
- no site is suitable;
- a number of sites are suitable; and/or
- only one site is suitable.

If no site is found suitable and no additional sites are available or proposed by government, then certain compromises may need to be taken. While regrettable, in such a case, some of the earlier identified constraints may need be removed from the analysis until a site can be identified. The advice of an environmental specialist or UNHCR's technical services should be sought on which constraints should be removed first. Should this be the case, however, care should be taken of the features of the removed constraint(s) and, to the extent possible, remedial action identified to help mitigate any negative impacts which might arise from having had to take this action.

In the cases where only one site is suitable, the EA should continue, following the approach outlined in Section 4 (**Conducting an Environmental Assessment**) of this Handbook, to determine the characteristics of the adverse impacts and the extent to which they might be prevented or reduced. Also, if beneficial impacts and opportunities were identified more precisely then measures to add extra "value" could be formulated.

> **INTEGRATING THE INTERESTS OF REFUGEES WITH THOSE OF HOST COMMUNITIES**
>
> It is advisable to try and take a longer-term perspective when planning and designing facilities for refugee camps and settlements. With regards the environment and use of natural resources, refugees can if conditions are prevalent contribute positively to natural resource management and regeneration. They need not always be seen as people who only deplete resources. However, the conditions must first be there for them to engage in positive activities.
>
> Also, infrastructure such as roads, bridges and clinics provided for camps and settlements should be seen as useful current and future new assets in an area. Once the refugees leave, these assets are potentially valuable to the host community. Similarly, new arable farming areas cleared by the refugees may be a valuable asset for local villagers.
>
> The planning and design of camp/settlement infrastructure should therefore consider subsequent use of such facilities by local communities.

If a number of sites are available, it is worthwhile considering a REA on at least the top favoured sites for camp/settlement construction. This, at least, will already provide some essential baseline data and perhaps provide planners and/or managers with information that would prove useful when the time comes to making final decisions on locations.

In all cases, however, site suitability must be confirmed by a site visit and, to the extent possible, consultations with the key national and local stakeholders.

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RELEVANT INTERNET SITES

The following list is a selection of Internet sites where further information can be obtained. Several of the sites provide links to numerous other web sites. All these sites were accessible and fully operational at the time of writing. However, it should be appreciated that addresses can change without warning.

Department for International Development: www.dfid.gov.uk

EBRD's Environmental Appraisal Unit: www.ebrd.com/enviro/intro/e01.htmv

US Environmental Protection Agency: www.epa.gov/

Canadian Environmental Assessment Agency: www.acee.gc.ca/

International Association for Impact Assessment: www.iaia.ext.nodak.edu/IAIA/

World Conservation Union (IUCN): www.iucn.org

ANNEX I   **ENVIRONMENTAL ASSESSMENT STUDY FOR THE PROPOSED EXTENSION TO A REFUGEE CAMP AT JIMMI BAGBO, BO DISTRICT, SIERRA LEONE**

1.   STUDY APPROACH

This Environmental Assessment study of the proposed expansion of the Jimmi Bagbo refugee camp was undertaken by a team of environmental specialists from the Environmental Foundation for Africa, supported by Ron Bisset, UNHCR consultant. Information on the site, and the proposed expansion of the camp was obtained from UNHCR Sub-Office in Bo. Two days were spent on field visits and scoping. The first day focused on the area outside the camp and on interviewing stakeholders in Jimmi Bagbo township and the nearby village. The second day focused on the area within the camp and on consultations with representatives from among the refugee community and the camp managers. A list of the stakeholders consulted is shown opposite.

STAKEHOLDERS CONSULTED
• Jimmi Bagbo Town Chief and Township Administration • Other community members • Farmers • Refugee leadership • Refugee women's group • Refugee site construction workers • Community representatives in the camp • Camp managers – Peace Winds Japan • United Nations High Commissioner for Refugees

After the scoping/field visits, likely significant impacts were identified for three main stages of the camp: construction, management and rehabilitation. Mitigation measures were formulated and described. At the end of this EA report, general recommendations are presented on the role of EA, and the Implementing Partner with environmental responsibilities, in the context of new camp sites or expansion of existing camps.

2.   PROPOSED EXPANSION OF THE CAMP

Jimmi Bagbo is the Head Quarter town of Bagbo Chiefdom, Bo District, southern Sierra Leone. This town was identified for the construction of a refugee camp for Liberian refugees. The camp was commissioned in November 2001 and had received a caseload of approximately 1,900 refugees by the time of this EA (27-28 January 2002). It is projected that the population of the camp will increase to 6,000 as new cases are arriving from Liberia at an increasing rate. It is proposed that this expansion will be within the existing camp boundaries, increasing the number of camp layout phases from three to five. It is possible that the camp may expand, eventually, to house approximately 10,000 refugees. Such an expansion would entail occupation of land outside the current boundaries.

This EA focuses only on the impacts of the proposed expansion within the current boundaries. The impacts of expansion outside the boundaries would be, in the main, similar to those described below.

3.   EXISTING ENVIRONMENTAL SITUATION

3.1   Vegetation Cover

Tropical rainforest starts approximately 500m outside the centre of the township. Shrub bushes (2–5m tall) grade from the forest to the centre of the township. Inland valley swamps are other main features of the landscape with one large swamp curving around the township. These

swamps are fertile and are cultivated, to some extent. They provide a habitat for wetland birds in the area. A stream forms a section of the camp boundary. There are mature stands of riverine trees that belong to the paramount chief.

Inside the camp, approximately 30 per cent of the camp area is characterised by tree and shrub cover. Much of the land adjoining Jimmi Bagbo has been cleared for the reception area for new arrivals, administration facilities and for Phase 1 of the camp construction. Few trees have been left and the ground is bare. Vegetation is being cleared by felling and fire to create land for Phases 2 and 3. There is one small swamp completely within the camp boundary and part of a larger swamp near Phase 1.

3.2 Wildlife

Small ruminants have remained close to the community while bigger mammals have gone into the forest. At least five species of birds were seen. The stream was seen to contain small fish. In the camp area there are snakes.

3.3 Soil

The soil is basically loamy in the higher ground and gradually becomes clayey loam in the lowlands. The soil is loose, porous and fertile.

3.4 Health

In Jimmi Bagbo, only two public wells have survived the conflict and serve the community. The stream is used by the local community of Jimmi Bagbo, and some refugees, as a public laundry and bath. It is also used upstream to wash diamonds, causing the water to become turbid in places.

Solid waste management is poor. All types of wastes are thrown in bushes at the back of houses. There are very few public or private toilets.

One clinic has been renovated recently to serve refugee and host communities.

3.5 Socio-economic

The socio-economic status of the local communities is very low as the people are just returning from a refugee situation. Their major source of income is farming. A new access road to a nearby settlement is being constructed from Jimmi Bagbo.

The host community has been very supportive of the actions to assist the refugees. It agreed to the land being used for the camp with no compensation.

4. DESCRIPTION OF LIKELY SIGNIFICANT IMPACTS

From the scoping results and analysis, it is predicted that the establishment and further expansion of the camp will have several significant negative impacts on the environment which, if not properly managed, will cause extreme environmental damage and serious consequences for the refugee and host communities.

4.1　　　　Construction Phase

4.1.1　　　　Vegetation Cover

Inside the camp the most significant impact of the construction phase on the environment is the loss of forest cover that will accompany the establishment of Phases 4 and 5. If the evidence of events preceding construction of Phases 1–3 is a guide, virtually no tree cover will be left and bare soil will predominate. As the soil surface is exposed, a chain of events takes place which include an increase in soil compaction, increase in reflectivity and surface heat, increase in dust pollution and corresponding tracheal diseases, decrease in water table, and loss of soil fertility and micro-organisms. These conditions will persist for as long as the camp is in operation. They will also make any re-vegetation, whether natural or assisted, more difficult and potentially, in the latter case, more expensive.

The loss of vegetation cover in areas around the camp is also a significant impact. The impact derives from the cumulative effects of the needs of construction and fuelwood being met by the vegetation existing around the camp. The main current needs are for palm fronds and sticks to construct booths.

Palm trees – 160 palm fronds are being supplied to each family. This corresponds to stripping four palm trees of their fronds. The number of families in the current refugee population of 1,900 is 647, stripping approximately 2,500 palm trees. The number of trees under threat when the camp reaches its possible final population is extremely large and there is a potential effect on the yield of palm trees as photosynthetic rates are reduced and potential yield from valued palms is reduced. This may have an indirect effect on the livelihoods of local people.

Fence sticks – 120 fence sticks are supplied per booth. This amount, when calculated for 647 booths, equates to 77,640 sticks. The plant from which bush sticks are taken has an approximate cover of $1m^2$, which gives at least 7.7 hectares of forest cleared for Phase 1. Again, the potential loss of vegetation to provide sticks is potentially significant for the local forest if one considers the amount of sticks needed for a possible maximum population of 15,000 refugees.

Fuelwood – At present the forest clearing within the camp provides fuelwood. However, when this supply is used the surrounding vegetation will be the primary source of supply. If one assumes a rate of fuelwood consumption of 3kg/family/day then this is another significant contributor to vegetation loss outside the camp.

Refugees state that the supply of construction materials is already insufficient and they buy additional fronds and sticks from local people. Also, other non-timber forest products are used (e.g. fibres to make ropes which are used to bind frames in the construction of houses). This means that the demand is greater than the official supply figures would indicate and the pressure on the forest area is correspondingly larger.

The magnitude of vegetation loss inflicts significant impact on the environment not least the adverse effect on the natural regeneration rate of the forest.

4.1.2　　　　Health

Existing water points are not sufficient in number and they dry up during the day because the rate of recharge cannot match the population demand. This introduces a highly significant health risk as people are forced to use the stream, and even the swamp (in the morning when the water level has built up and the water is less turbid), as the only alternatives.

As the number of latrines is insufficient the refugees use surrounding bushes and the stream as toilets, creating a significant health hazard. The number of latrines will increase to match the refugee population so this impact may be short-term, but it remains significant.

Solid waste management appears not to be planned beyond digging a pit, filling it and then moving on to another pit. In the short-term this may be acceptable, but as numbers increase and available space decreases this strategy may need to be revised. The management to be applied to the pits through their active life is not known. The potential impacts are significant (e.g. possible health hazards and contamination of ground water), unless measures are devised to ensure that the hazards posed by solid waste disposal are minimised.

Refugees dig earth from pits outside their booths to make mud for "dabbing" the walls. These pits are then used as receptacles for waste, and are filled in sequentially as the phases are constructed. It is very likely that some will not be filled in by the wet season and may hold enough standing water for sufficient periods to provide breeding areas for some insect vectors of diseases such as malaria. Again this poses a significant health risk. It should also be noted that these open pits present a safety hazard for children in the camp as it is possible that they may fall in and become trapped.

4.1.3 Socio-economic
There is an increase in trade and income for local people through the sale of fuelwood, bush sticks and thatch. This is increasing the per capita incomes of some families, which is a welcome addition to existing earnings at a time when reconstruction of houses and community infrastructure is a priority. Also, according to an arrangement with the camp managers (Peace Winds, a Japanese NGO and UNHCR Implementing Partner) a number of jobs created by the camp operations will be made available to local people. So far, it appears that only a few such jobs have been created.

4.2 Management Phase

4.2.1 Vegetation Cover
Changes in vegetation cover outside the camp will remain a significant impact (that inside the camp will have been all but removed) unless mitigation actions – see Section 5 below – are implemented as soon as possible. Demand for fuelwood by a population of approximately 15,000 refugees is a major contributor to this impact, especially if this population remains in the camp for a period of years. If the population remained for five years the demand would be approximately 16,500 tonnes of fuelwood. There will also be a continuing demand for thatch and sticks to repair booths.

At present, there is a band of forest between Phase 1 and 2. This is likely to be removed. At one end there is a significant slope and a potential for erosion if there is no cover left. Erosion might affect the access road and nearby booths in Phase 2.

4.2.2 Wildlife
The cumulative impact on the vegetation coupled with a possible increase in hunting will cause a significant impact on local wildlife populations.

4.2.3 Health
The clinic serves both refugees and locals (refugees receive free treatment while the local people pay a small amount). It does not have adequate capacity to handle both a camp of 15,000 and the local community, therefore health impacts are likely to be significant. There is a potential continuing health risk posed by inappropriate use of the stream, for different purposes, unless adequate toilet and water supply facilities are functioning.

4.2.4 Socio-economic
There is a current dispute between the refugees and certain operational agencies regarding the adequacy of the food basket. It was confirmed by respondents in the township and village and, also, among the refugees that some refugees were leaving the camp to try to obtain food from local people. There exists an undoubted concern among the host community members that, if the

issue of food is not settled, their livelihoods might be threatened by the refugees' attempts to supplement their own ration. Villagers confirmed that they no longer left food in the fields for collection later because of this perceived threat.

A related concern in the host community relates to the lack of a police post to assist in social control in conflict situations. Without a sense of security, and confidence in an impartial authority charged with social control, there might be serious effects on community stability and harmful psychological effects on vulnerable individuals.

Such potential socio-economic impacts may not happen, but if they were to occur then the impacts would be significant not only for the refugees and host community, but also for the agencies responsible for Jimmi Bagbo.

4.3   Rehabilitation Phase

There is no rehabilitation and after-use plan. After abandonment of the camp, natural regeneration of forest cover may occur in about 30 years if it is not further disturbed. The host community can re-use some of the semi-permanent structures and sticks from broken down structures may be sold, generating income for community members. Also, safe drinking water will be more available to local people, as the wells will be left. A population drift from the host community to the post-camp area might occur, creating an expansion to the existing settlement. However, a general "litter" of infrastructure is likely to be left affecting the aesthetics of the site and making rehabilitation and after-use more difficult to accomplish than would be the case if non-valued structures were removed systematically as part of a considered rehabilitation plan.

5.   PROPOSED MITIGATION ACTIONS

Mitigating actions are listed according to the phase used to assess the significant impacts. There is some repetition among these as some measures can mitigate a number of impacts, e.g. leaving sufficient trees standing in the areas to be cleared for Phases 3-5. The main mitigating measures recommended are:

5.1   Construction Phase

5.1.1   Vegetation cover (outside the camp):
Implement a specialist survey on the short- and long-term effects of using palm fronds for thatch on the palm trees and their productivity. Depending on the outcome of this study:
- investigate the use of alternative roofing materials;
- create a nursery of oil palm seedlings to replenish stocks;
- plant woodlots as buffer zones to allow regeneration of bush sticks – ownership of these lots needs to be determined in advance;
- investigate the use of mud bricks as an alternative building material; and
- launch awareness raising campaigns to reduce pressure on vegetation.

5.1.2   Vegetation cover (inside the camp):
- Sufficient trees must be marked, and left standing, to provide for adequate shelter, protect soil fertility, protect booths and other structures against wind damage and to prevent erosion in specific locations.
- Trees around the stream must remain protected.
- Use of fire, as a land clearing tool, must be discouraged.
- Plant trees between booths and other open areas.
- People should be encouraged to use small plots near booths to grow vegetables and flowers.
- Awareness raising on the importance of trees in the ecosystem must be carried out.

5.1.3   Health

- A camp waste management strategy must be produced.
- Use of composting techniques and simple sanitary landfills must be promoted.
- Ensure that pits dug for mud are filled in by the wet season and measures are in place to ensure that mosquitoes and other insect vectors cannot breed.
- Increase access to safe drinking water quickly (possibly by re-deepening the wells).
- Consider appropriate incentives for digging latrines so that the provision keeps pace with the population expansion in the camp.

5.1.4   Socio-economic

- Training of local community in sustainable natural resource management.
- Assistance to diversifying the income generating capacity of the local community.
- Resolution of food basket issue.
- Promotion of poultry, fish husbandry and agricultural activity as a practical solution to the food issue.
- Consideration of need for police presence in the township.
- Immediate and transparent implementation of the "50:50 refugee:host community" job policy of Peace Winds.

5.2   Management Phase

5.2.1   Vegetation cover (outside the camp)

- Promote the use of eco-stoves.
- Energy-saving cooking practices to be encouraged, e.g. pre-treatment of cooking materials.
- Possibility of communal cooking to be investigated and, if found acceptable to the refugees, encouraged.
- Establishment of fuelwood lots.
- To enhance resource management and avoid significant medium- to long-term environmental stress another location should be identified for any expansion of camp numbers beyond 10,000.

5.2.2   Wildlife

- Promote poultry, fish husbandry and the rearing of small ruminants.

5.2.3   Soil erosion

- Mark important trees and avoid damaging them during clearing.
- Construct well-engineered drainage system.

5.2.4   Health

- Consider appropriate incentives for digging latrines so that the provision keeps pace with the population expansion in the camp.
- Build additional wells.
- Educate refugees not to drink from streams or use them as a toilet.

5.2.5   Socio-economic

- Encourage refugees to explore alternative income and food generation, e.g., vegetable farming.
- Resolution of the food basket issue.

5.3   Rehabilitation Phase

- Initiate discussions on after-use of the camp as soon as possible.
- Preserve existing trees and plant new trees within the camp as soon as possible.

UNHCR and operational partners should agree on specific agency responsibilities to implement the above measures.

6.   SUMMARY OF KEY FINDINGS

The rate of forest cover loss outside the camp and its accompanying ripple effects can result in a serious and significant situation where the carrying capacity of the environment is exceeded in terms of sustainable utilisation of certain vegetation resources. When the refugee population reaches its climax, there is the potential for key resources to become unobtainable for both refugees and the host communities. At this stage, the entire sustenance of the camp will depend on UNHCR, with no input from the refugees – even fuelwood may not be available. When this situation becomes apparent to the host community, local people may become hostile to the refugees.

Inside the camp the current and continuing removal of vegetation will have potentially serious implications in terms of microclimate change, soil fertility and quality of life for the refugees. The likely adverse health impacts are also quite significant. If the impacts identified are not appropriately mitigated, there may an outbreak of an epidemic like cholera and consequent illnesses and, perhaps, loss of life.

7.   GENERAL RECOMMENDATIONS

Alternative potential camp sites should be appraised against specific key environmental criteria (in addition to the existing political, technical and other. criteria) before a specific option is chosen.

All proposed camps should have an EA undertaken as early as possible in the camp planning and design period. Findings and recommendations to be taken into account.

Negotiations for every future camp must include land for wood lots, in addition to the land needed for shelters and other structures, and all boundaries should be drawn accordingly.

UNHCR and its Implementing Partners with camp management responsibilities must be in consultation, systematically, with the partner responsible for environmental issues. When appropriate, (e.g. following the findings of an EA), the outcome of such consultations should be expressed in the form of a Memorandum of Understanding on implementation.

ANNEX II   SAMPLE TERMS OF REFERENCE FOR A PRELIMINARY ENVIRONMENTAL ASSESSMENT

The following Terms of Reference (TORs) were prepared for a small team to carry out a preliminary environmental assessment for a proposed extension to a refugee camp in Sierra Leone The steps outlined are intended to help users develop similar TORs for other, specific situations.

PRELIMINARY ENVIRONMENTAL ASSESSMENT (EA) FOR PROPOSED EXTENSION TO A REFUGEE CAMP AT JIMMI BAGBO, BO DISTRICT, SIERRA LEONE

TERMS OF REFERENCE

Background

Jimmi Bagbo is a refugee camp for Liberian refugees with a current population of approximately 1,800. Rapid expansion is foreseen to a population of approximately 7,000 in the future with possible further expansion if needed. The area for expansion is within the existing camp boundaries. Relations with the host community appear to be good.

Tasks

Work in two groups. All members should have read the relevant sections of the (then) draft **EA Guidelines** which will be the basis for undertaking the EA.

Activity 1

Site visit to area around the camp. Understanding of the key baseline features. Discussions to be held with local stakeholders regarding their use of local natural resources and important environmental features. Questions may be asked about existing environmental changes (good and bad) and the causes from the point of view of the stakeholders. "Environment" is to be defined broadly to contain socio-economic and health aspects if necessary. See Task 2 of the **EA Guidelines**.

NB. It is necessary to be diplomatic with such questions. We cannot be seen to lead local people to blame refugees for environmental impacts.

Activity 2

Visit the camp and study current layout etc and the area designated for expansion. Discussions with camp managers (including IPs) and refugees on current environmental problems, trends and any actions being taken to deal with them. Also, focus on details regarding the camp expansion (source of materials, etc) and rehabilitation/closure intentions (see Task 1 of the **EA Guidelines**).

Activity 3

On the basis of results from Activities 1 and 2 identify the main likely significant impacts (impacts of concern). This should be done for the three phases: construction, operation and rehabilitation/closure. The work relating to the latter phase could usefully focus on the entire camp not just the extension area.

Consider not only impacts outside the camp boundary, but also environmental threats to the welfare of the refugees. Indicate briefly (and only to the extent you consider possible) for each impact the following:

- duration;
- reversibility;
- adverse/beneficial;
- area/number of people affected; and
- probability (certain, very likely, likely, unlikely; if unlikely indicate whether the consequences would be serious should the impact occur).

Finally, please indicate where further work should be undertaken to investigate specific impacts.

Activity 4

Identify and describe the mitigating measures that need to be implemented to prevent, minimise or control (to an acceptable level) the significant adverse impacts. Briefly indicate the actions needed and means of implementation. (See also section Task 6 of the **EA Guidelines**.)

Activity 5

Draft a report of the EA work with the following sections:

- introduction and background (explaining the study approach and the constraints);
- description of the existing environment;
- description of the proposed camp expansion;
- description of significant impacts; and
- description of mitigating measures.

The EA report should include an annotated map of the camp and the surrounding area. There should be two Appendices listing all stakeholders consulted and the study team members respectively.

This report will be presented to appropriate UNHCR and Implementing Partner offices.

ANNEX III   SAMPLE CHECKLISTS TO ASSIST WITH SITE IDENTIFICATION AND SELECTION

The following checklists have been adapted from two main sources: Ministerie van Buitenlandse Zaken (1999) and WFP (1999).

CHECKLIST FOR TYPICAL **PROTECTED AREAS** (OFTEN DEFINED IN LAW AND OFFICIALLY GAZETTED)

- ❖ UNESCO World Heritage Site
- ❖ Ramsar Site (Wetlands of International Importance)
- ❖ UNESCO Biosphere Reserve
- ❖ (Strict) Nature Reserve
- ❖ National Park
- ❖ Natural Park
- ❖ Regional Park
- ❖ Wildlife Reserve/Sanctuary/Refuge
- ❖ Game Park/Reserve
- ❖ Hunting Reserve/Controlled Hunting Area
- ❖ Botanical Reserve
- ❖ Ecological Reserve
- ❖ Forest Park/Reserve
- ❖ Marine Reserve/Park
- ❖ Protected landscape
- ❖ Environmental Protection Area
- ❖ Indigenous Reserve (area set aside to protect indigenous people)
- ❖ Natural monument (topographic or landscape feature with local cultural or political significance)

CHECKLIST FOR **VULNERABLE ECOLOGICAL AREAS**

- ❖ Wetlands
- ❖ Mangroves
- ❖ Coastal zones, including coral reefs
- ❖ Floodplains
- ❖ Tropical rainforest
- ❖ Other forest types
- ❖ Tropical savannah
- ❖ Ecological corridors which enable animals and plants to disperse and colonise new areas
- ❖ Areas with high natural erosion rate
- ❖ Areas with high seismic activity
- ❖ Areas where desertification is known, or suspected, to be occurring
- ❖ Drinking water conservation areas
- ❖ Areas rich in cultural and/or archaeological resources
- ❖ Areas of religious or spiritual significance for local people
- ❖ Areas where environmental rehabilitation is occurring (e.g. reforestation to reduce erosion)
- ❖ Non-protected areas necessary for the maintenance of ecologically or financially valuable species or natural resources (e.g. areas of riverbed using for spawning)

CHECKLIST OF POSSIBLE **ENVIRONMENTAL, SOCIAL AND HAZARDOUS FEATURES**

Environment
Soil capability
Surface and underground water resources
Gradient of slopes
Water sources and supply potential
Type(s) and density of woody vegetation cover
Roads (year round and seasonal access)
Infrastructure (electricity, gas, water supply networks). Often these are laid near to each
        other in corridors to reduce land take and construction expenses

Social
Population size and density
Local administrative boundaries
Ethnic composition (groups, population and location)
Main land uses and extent of areas used (including temporary use, e. g. by pastoralists)
Land ownership
Location of towns and trading settlements

Hazard
Mines and other unexploded ordnance
Floods
Forest/bush fires
Earthquakes

TYPES OF **ENVIRONMENTAL AND SOCIO-ECONOMIC OBJECTIVES AND POLICIES** FOR AN
AREA

Objectives and Policies
Designation of a protected area
Designation of areas to be subject to special management regimes
        (e g. watershed conservation for water supply security)
Environmental improvement initiatives (soil, water, air, vegetation, fauna, etc.)
Infrastructure projects (roads, water supply schemes, etc) with the
        potential to alter current environmental conditions
Population movements (voluntary resettlement away from hazardous areas)
Land-use change (such as designation of areas for housing and industry)
Socio-economic development initiatives (such as agricultural and
        irrigation schemes or designation of certain communities as growth poles)
Poverty eradication initiatives

Possible Sources of Information
National Development Plans
National Environmental Action Plans
National Strategies for Sustainable Development
National Biodiversity Plans
Tropical Forestry Action Plans
Poverty Reduction Strategies (some have environmental component)
Local Government plans for economic development, land use and environment

CHECKLIST TO ASSESS POSSIBLE IMPACTS OF AGRICULTURAL ACTIVITIES

Sector Activity	Potential Impacts	Causes	Mitigation Measures
Application of fertilizers and pesticides Land clearing to expand crop production Introduction of exotic species or monocultures Changes in farming systems	Will the activity lead to: Conversion of land which supports habitats or species of conservation importance, or important historical or cultural areas? Conflict with existing land uses, use of safe drinking water supplies, labour demands (seasonal users such as pastoralists)? Soil erosion, soil degradation, falling crop yields, etc., due to incompatibility between land suitability and proposed land management practices? Changes in ways people sustain their livelihoods and possible indirect environmental impacts? Undermining of local plant genetic variability? Pesticide or fertilizer run-off to water bodies, threatening commercially significant ecosystems or species or those of conservation importance? Induced development through the construction of access or feeder roads and subsequent environmental impacts?	Settlement of marginal lands Shortened fallow periods Major land clearance Introduction of exotic crops Use of highly mechanised techniques Major application of agro-chemicals Alteration of natural drainage patterns	Avoid reclaiming wetlands, waterways, or woodlots Retain certain types of vegetation such as tree stumps and shrubs to help preserve soil structure and prevent soil erosion Plant the cleared area immediately following clearance with an appropriate vegetative cover to limit erosion and nutrient loss Categorise agro-ecosystems before defining a farming system Encourage agro-silvopastoral systems Introduce soil and water conservation techniques appropriate to farming system and topography Introduce post-harvest practices to reduce losses in yields Institute training programmes on water conservation techniques, soil conservation measures, protection of native plant varieties and the judicious and safe application of agro-chemicals Manage buffer zones between forests or protected areas (national parks, biological reserves) and agricultural areas Institute extension services to educate and train agriculturists in environmentally responsive land and crop management Select pesticides and fertilizers that do not bio-accumulate, are biodegradable and have low toxicity Avoid spraying pesticides on crops close to the banks of water bodies, ground water recharge areas and over small farm units

CHECKLIST TO ASSESS POSSIBLE IMPACTS OF AGRICULTURAL ACTIVITIES

Sector Activity	Potential Impacts	Causes	Mitigation Measures
			Encourage integrated pest management as an alternative to pesticides Use organic and/or green manuring to combat lethal effects on micro- and macro-organisms of over-intensive use of fertilizer salts and anhydrous ammonia Limit nitrogen fertilization in crop rotation and near surface water supplies Monitor water quality levels and restrict fertilizer use where appropriate Alert the national genetic resource conservation agency when wide distribution of non-local seeds is planned

CHECKLIST TO ASSESS POSSIBLE IMPACTS OF FORESTRY ACTIVITIES

Sector Activity	Potential Impacts	Causes	Mitigation Measures
Reforestation Tree-planting and forest product production Maintenance of young plantations and trees Forestry extension Wood supply and harvesting	Will the activity lead to: Lowering of the water table and/or interception of rainfall, which may be detrimental to other species or users of ground water? Conversion of agricultural land and reduction on food production? Exploitation or conversion of forested areas that support valuable ecosystems (e. g., protected areas, critical habitats, endangered species); or containing important historical/cultural sites? Conflict with existing uses for forested areas (e.g. fuelwood forest products, wildlife, wildlife habitats)? Altering livelihood support activities of local populations, leading to increased pressure on natural resources (e.g. soil, wildlife, potable water supplies)? Induced development through the construction of access or feeder roads and subsequent environmental impacts?	Forest dependent women and men not fully consulted in the planning process Special measures not targeted to vulnerable groups, for example the provision of secure tenure on demarcated reserved areas Harvesting of timber and non-wood products is not controlled by a management or working plan that is based on clear "ownership" of trees and non-timber forest productions Some forest, rich in biodiversity, is not set aside for complete protection from exploitation Inadequate institutional capacity to control and supervise the logging process at all stages	Resolve conflicts in local tenure systems Avoid new species or new technologies for which local knowledge is weak Match species to local needs and site conditions Control planting, cutting and spacing Limit the establishment of new roads Protect water resources and unstable slopes Adopt closure natural regeneration techniques when feasible Ensure that logging damage to the residual stand is minimised Ensure long-term viability by adopting only economically viable forestry operations Ensure that incentives are sufficient to allow for longer-term protection and maintenance Encourage sustainable forest management practices Establish long-term use/benefit-sharing contracts for community groups based in national or local land tenure systems Ensure traditional ownership rights and responsibilities are integrated into management and harvesting actions

CHECKLIST TO ASSESS POSSIBLE IMPACTS OF WATER SUPPLY ACTIVITIES

Sector Activity	Potential Impacts	Causes	Mitigation Measures
Water storage Water conveyance Disposal of drainage water Borehole construction	Will the activity lead to: Increased incidence of water-borne or water-related diseases? People altering the method by which they sustain their livelihood and possible subsequent environment impacts? Conflict with downstream users regarding loss or contamination of water? Pollution of water bodies threatening aquatic habitats and species of conservation importance or commercial value (e.g. fish)? Reduction in groundwater table and environmental/socio–economic consequences?	No groundwater sustainable yield data Absence of adequate planning and maintenance Insufficient drainage Inadequate involvement of refugees/host community Use of environmentally unsound construction methods Absence of monitoring Improper siting and siting in environmentally sensitive areas	Use enclosed systems (lined pipes or canals) for water/wastewater to prevent disease, seepage and evaporation Schedule water drawdowns to minimise negative effects on local ecosystems Maintain or provide corridors for wildlife movement Minimise erosion by planting trees or other suitable vegetation Site projects to avoid encroachment into sensitive natural or human environment (e g. tropical forest, forests, wetlands, historical and cultural sites) Use local plants to reduce disease vectors If appropriate, promote planting of crops with low water demand Avoid the creation of stagnant or slowly moving water susceptible to disease vectors Protect water recharge zone and plant with forest trees (avoid using fruit trees)

CHECKLIST TO ASSESS POSSIBLE IMPACTS OF RURAL ROADS

Sector Activity	Potential Impacts	Causes	Mitigation Measures
Road grading Road widening Bridge construction Building	Will the activity lead to: Loss of vegetation? Soil erosion? Loss of biodiversity? Water pollution or siltation? Loss of aesthetic attributes? Physical and social disruption to nearby communities through restriction of access to fields, neighbours, schools, kin, etc.? Migration of resource users that can increase charcoal production shifting cultivation, disease, etc.? Shortage of agricultural labour resulting from employment with road improvement project? Increased accidents? Improved access to social services with accompanying benefits? Changes in local livelihood support systems (e.g. more charcoal production due to better access to markets) and subsequent environmental impacts?	Absence of adequate erosion control measures Use of environmentally unsound construction methods Inappropriate route planning and design Inadequate road maintenance Inadequate signage	Conduct survey and planning activities with resource users Determine needs and interests of resource users Conduct assessment to identify the location of forests, protected areas, water resources, steep slopes, etc. Identify best site for road construction activities Use best design practices; properly designed culverts, soil erosion prevention, maintain existing water resources and wildlife, stabilise slopes with vegetation Preserve natural habitat along streams, steep slopes, and ecologically sensitive areas Reform policies to control human migration to ecologically sensitive areas Develop maintenance and reclamation plans. Restore vegetation and habitat Monitoring of livelihood changes and formulate responsive management framework to deal with adverse impacts if identified.

FRAME Toolkit

This toolkit comprises the following modules:

1.   Introduction to the FRAME Toolkit

2.   Environmental Assessment

3.   Rapid Environmental Assessment

4.   Community Environmental Action Planning

5.   Environmental Indicator Framework

6.   Geographical Information System

7.   Evaluation

**For more information on this Toolkit, please contact:
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