Engineering and Environmental Services Section
United Nations High Commissioner for Refugees
Case postale 2500
CH - 1211 Genève 2 Dépôt

REFUGEE OPERATIONS AND ENVIRONMENTAL MANAGEMENT: SELECTED LESSONS LEARNED

Refugee Operations and Environmental Management

SELECTED LESSONS LEARNED

Refugee Operations and Environmental Management

SELECTED LESSONS LEARNED

TSEMPRAA

The TSEMPRAA activity – **"Towards Sustainable Environmental Management Practices in Refugee Affected Areas"** – set out to review selected environmental programmes and activities in refugee camps, the aim being to identify a series of key lessons from previous and ongoing experiences, turn up useful case studies and produce environmental training materials for use in refugee situations.

The main objectives of TSEMPRAA were to:

- learn lessons from past experience;
- disseminate and harmonise best environmental practices among donor communities and partner organisations; and
- through training, provide field officers and staff in head offices with an understanding of the usefulness of integrated environmental interventions.

The TSEMPRAA activity was made possible with funds provided by the governments of Japan, the Netherlands and the United States of America. A Steering Committee, comprising UNHCR, various implementing partners and other UN agencies, and donor governments, was formed to co-ordinate and oversee the entire process.

Five teams were assembled to examine issues relevant to each phase of refugee operations. Missions were conducted in 10 countries, the topics covered being:

- Emergency preparedness and response – Tanzania and the Democratic Republic of Congo;
- Care and maintenance – Kenya and Nepal;
- Moves to self-sufficiency (within care and maintenance) – Côte d'Ivoire and Guinea;
- Return and re-integration – Ethiopia; and
- Rehabilitation – Malawi, Mozambique and Zimbabwe.

This Sourcebook is one of the outcomes of TSEMPRAA. While the Sourcebook will have a wide range of stand-alone uses, it can also be combined with the training materials prepared under the activity so as to provide concrete examples of lessons learned and case studies.

This selection of environmental lessons is drawn from the reports of inter-agency missions in 1997 to 10 refugee-hosting or former refugee-hosting countries. While the contents of those reports and the lessons themselves were reviewed extensively by the Steering Committee of TSEMPRAA, along with staff of UNHCR and expert participants at several international conferences, UNHCR and the UNHCR Environment Unit wish to state that the material contained herein does not necessarily reflect official organisational policy, neither of UNHCR nor of other agencies and organisations involved.

Executive Summary

Sudden large-scale population movements can adversely affect the environment and thus exacerbate the social, economic, ecological, health and political conditions within host countries. This creates an enormous challenge for agencies working with refugees, who need to ensure the continued willingness of host governments to provide asylum, while at the same time safeguarding the welfare of refugees.

UNHCR and its partners have become more aware of the need to adhere to sound environmental management practices, and avoid degradation where possible. In an effort to bring greater benefits to refugees, harmonise relations with local communities and host governments and guarantee asylum, those working with refugees must increasingly endeavour to implement strategies which sustain the local environment and natural resources for current populations and future generations.

Refugee and relief agencies should aim to prevent, mitigate and rehabilitate negative refugee-related impacts on the environment. Such a commitment requires the integration, to the greatest extent possible, of sound environmental management practices into all phases of refugee operations. Best practices need to be promoted and applied at the field level, particularly in project planning, implementation, management and monitoring. Environmental issues also need to be taken into account in training sessions, public awareness and information programmes, and fundraising events. These objectives are at the core of UNHCR's own environmental strategies.

This document is intended to serve as a Sourcebook – a compilation of selected environmental practices and lessons learned from past refugee operations. It is not exhaustive. Based on a series of case studies from various refugee operations in 10 different countries in Africa and South Asia, this Sourcebook is an output of the TSEMPRAA (Towards Sustainable Environmental Management Practices in Refugee-Affected Areas) activity carried out in 1997-1998, with the support of the governments of Japan, the Netherlands and the United States.

The lessons from TSEMPRAA build on a variety of successful and unsuccessful attempts in field operations to anticipate and mitigate negative environmental impacts, and refer to activities initiated at various stages in the development of UNHCR's environmental policy (approved in 1995). The lessons themselves do not necessarily represent official policy. They are likewise not formal environmental guidelines, but are drawn from mission reports and workshops to which many consultants, UNHCR staff, partner agency and government representatives have contributed.

In many respects, these lessons cannot be quickly operationalised. Although some are currently being practised, a number of lessons have been integrated only on a selective basis. Other lessons cannot be realistically replicated in many places given institutional, financial or political constraints.

Nevertheless, the more these lessons can be applied to refugee operations, the greater the likelihood of positive environmental outcomes as well as increased benefits to refugees, improved relations with local communities and host governments, and more efficient use of donor funding.

How to Use this Sourcebook

This selection of lessons learned from refugee operations is intended to serve as a reference and source of information for managers and field personnel, and assumes that such readers will not have had specialised training with environmental issues. Reflecting on specific technical interventions as well as processes followed, and spanning all phases of refugee assistance from emergencies to voluntary repatriation and rehabilitation, the lessons contained in this Sourcebook are diverse.

This Sourcebook is not designed to be read from cover to cover. Based on past experiences – some of which may already be familiar to UNHCR staff and those of its partner agencies – it is meant to be referred to for specific ideas, thoughts and advice.

This Sourcebook begins with an overview of why environmental issues should concern individuals and agencies working with refugees, many of whom may not previously have considered such matters relevant to their operations. In line with UNHCR's *Environmental Guidelines*, the Sourcebook seeks to reinforce the principle that incorporating sound environment management practices into humanitarian operations is a fundamental part of assuring the overall well-being and protection of refugees.

The main body of the text is arranged in three sections which correspond to:

- chronological phases of refugee assistance (Section 1);
- cross-cutting themes (Section 2); and
- technical themes (Section 3).

Case studies have been interspersed throughout the Sourcebook. Taken from the 10 original TSEMPRAA country reports, these detailed examples help support or explain selected lessons.

Readers requiring additional information on particular case studies or lessons should contact the UNHCR Environment Unit for complete copies of the country reports.

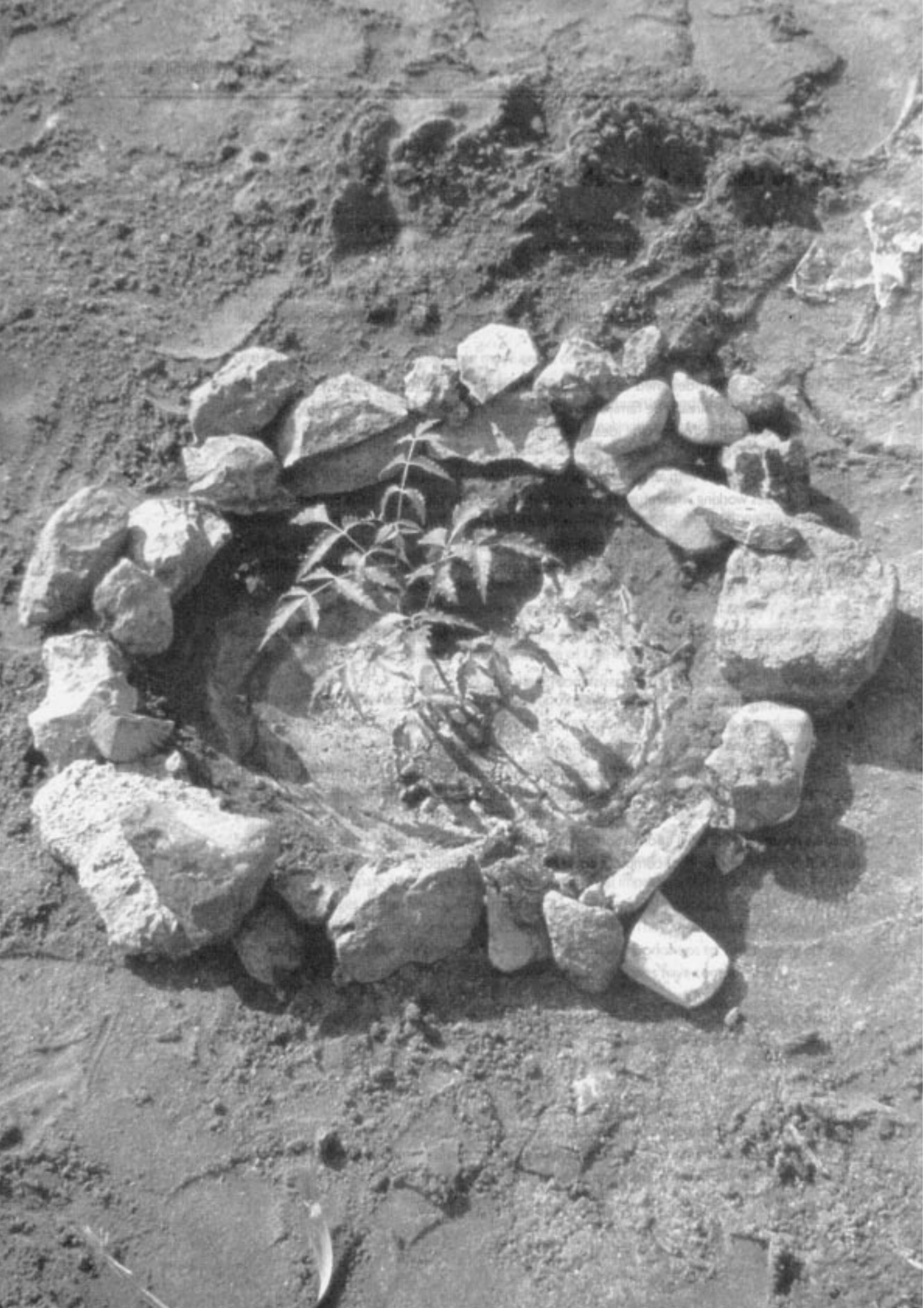


Table of Contents

Glossary

Biomass Organic material. 'Biomass fuels' are derived from any organic source, including wood, charcoal, agricultural residues and animal dung.

Deforestation Loss of forest cover. Deforestation does not necessarily mean removal of all biomass in an area. Regeneration can occur if roots and stumps remain, as many species are capable of coppicing (growing from the stump after the stem or branches are cut). Deforestation may lead to a process of forest modification as new species prosper in the absence of competition.

Degradation Lowered productivity of a natural resource (land, forests, aquifers, etc.) by reference to a selected benchmark.

Desertification Substantial change in the local environment, often following removal of vegetation cover in arid or semi-arid areas such that, under existing practices, the land in question is left unsuitable for its original purpose.

Empowerment A process of giving people more say in decisions influencing their lives.

Environmental Mainstreaming Integration of environmental interests into the culture and activities of refugee operations. Environmental mainstreaming is a UNHCR stated policy.

Gender The state of being male or female. Taking gender into account means acknowledging the respective roles of both gender groups and structuring projects accordingly; it does not necessarily mean designing projects that target only men or women.

Improved stove A general description for any cooking device designed to reduce energy consumption. Usually intended for woodfuels as an improvement on traditional open fire systems. Made of metal, clay, ceramic or a combination.

Natural resources A broad term encompassing plants, animals and all non human-made assets.

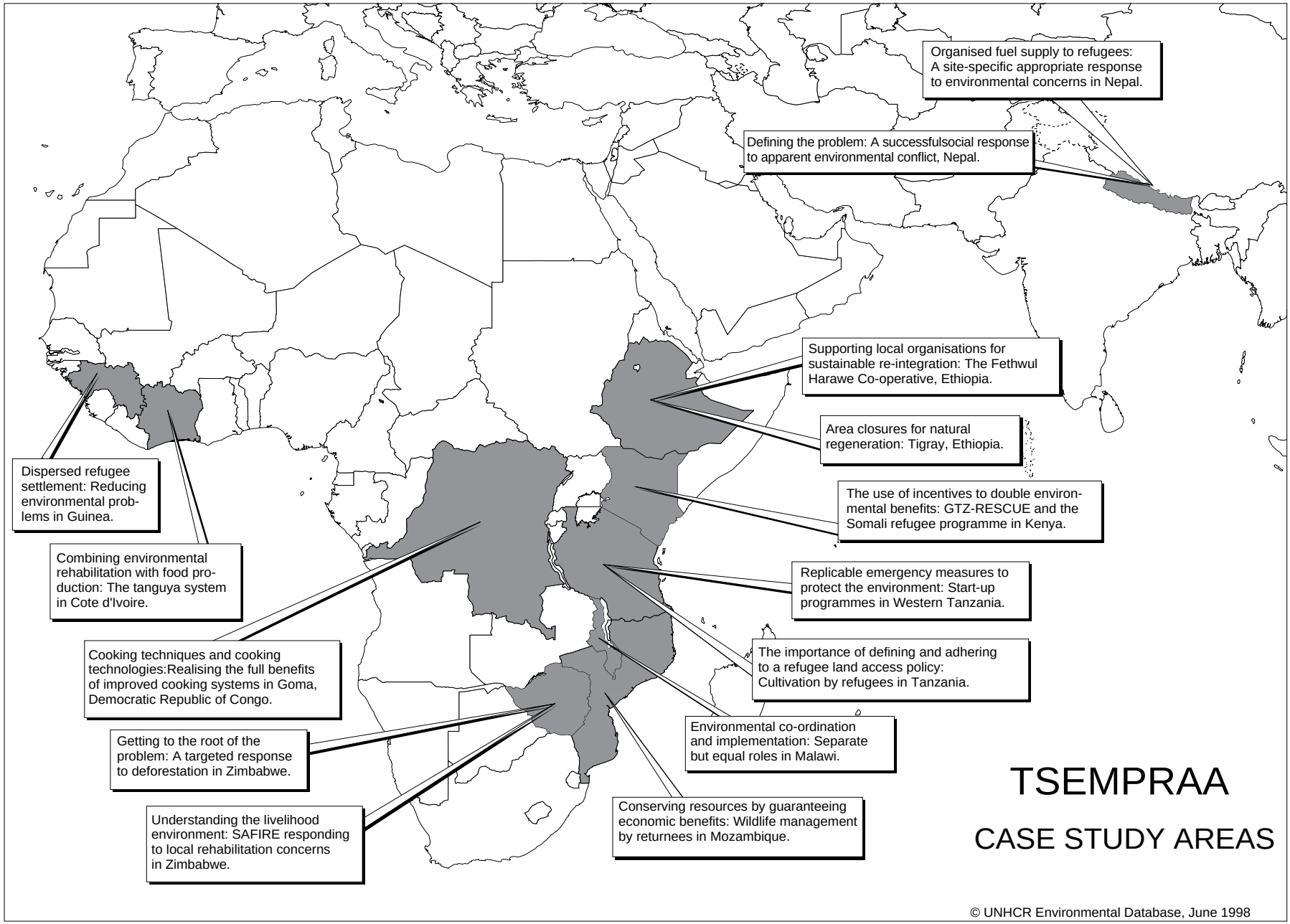
Participation As with empowerment, a process of involving people in the decisions and actions that influence their lives.

Sustainability Widely accepted as meaning the rational management of natural resources that will not make future generations bear the cost of current (over-) use.

Woodfuel Includes firewood and any other fuel based on wood – such as charcoal. Easily confused with fuelwood or firewood.

Acronyms

CBNRM	Community-based natural resource management
CURE	Co-ordination Unit for the Rehabilitation of the (Refugee-Impacted) Environment
ETF	Environmental Task Force
FCC	Fuelwood Crisis Consortium
FAO	Food and Agricultural Organisation
GIS	Geographical Information Systems
GPS	Global Positioning System
GTZ	Gesellschaft für Technische Zusammenarbeit
IFRC	International Federation of Red Cross and Red Crescent Societies
NGO	Non-governmental organisation
PRA	Participatory rural appraisal
RARP	Refugee-affected Areas Rehabilitation Programme (Nepal)
RESCUE	Rational Energy Supply, Conservation, Utilisation and Education (GTZ project, Kenya)
REST	Relief Society of Tigray (Ethiopia)
SAFIRE	Southern Alliance for Indigenous Resources
SERP	South East Rangelands Project (Ethiopia)
SODEFOR	Société pour le Développement des Forêts (Côte d'Ivoire)
TSEMPRAA	Towards Sustainable Environmental Management Practices in Refugee-Affected Areas
UNEP	United Nations Environment Programme
UNHCR	United Nations High Commissioner for Refugees
WFP	World Food Programme


Organised fuel supply to refugees: A site-specific appropriate response to environmental concerns in Nepal.
Defining the problem: A successfulsocial response to apparent environmental conflict, Nepal.
Supporting local organisations for sustainable re-integration: The Fethwul Harawe Co-operative, Ethiopia.
Area closures for natural regeneration: Tigray, Ethiopia.
The use of incentives to double environmental benefits: GTZ-RESCUE and the Somali refugee programme in Kenya.
Replicable emergency measures to protect the environment: Start-up programmes in Western Tanzania.
The importance of defining and adhering to a refugee land access policy: Cultivation by refugees in Tanzania.
Environmental co-ordination and implementation: Separate but equal roles in Malawi.
Conserving resources by guaranteeing economic benefits: Wildlife management by returnees in Mozambique.
Dispersed refugee settlement: Reducing environmental problems in Guinea.
Combining environmental rehabilitation with food production: The tanguya system in Cote d'Ivoire.
Cooking techniques and cooking technologies:Realising the full benefits of improved cooking systems in Goma, Democratic Republic of Congo.
Getting to the root of the problem: A targeted response to deforestation in Zimbabwe.
Understanding the livelihood environment: SAFIRE responding to local rehabilitation concerns in Zimbabwe.
TSEMPRAA
CASE STUDY AREAS
© UNHCR Environmental Database, June 1998

INTRODUCTION

Why the Environment Matters

Key Environmental Issues in Refugee Operations

Ample evidence exists to demonstrate that large-scale dislocation of people, characteristic of many recent refugee crises, creates adverse environmental impacts.

The scale and suddenness of refugee flows can rapidly change a situation of relative abundance of natural resources to one of acute scarcity. Where the hosting environment is already under stress, as it is for instance in many arid regions of Africa and Asia, an influx of refugees can seriously threaten the integrity of local ecosystems, the economic activities dependent on them, and the welfare of local communities.

Although deforestation tends to be the most apparent negative environmental feature of refugee situations, other visible impacts may include soil erosion, loss of wildlife and non-timber products, and loss of biodiversity. Indoor and outdoor air pollution caused by the concentrated use of biomass fuels, depletion or contamination of aquifers, and an altered pattern of transmission of certain diseases tend to be less obvious impacts, but can nonetheless be a serious threat to refugee health.

The Integral Nature of the Environment and Refugee Welfare

Host governments and humanitarian organisations are responsible for assuring the welfare and security of asylum-seekers. The condition of the environment where those asylum-seekers are settled becomes a key factor in enabling them to fulfil this mandate. One reason for this is the range of direct linkages that exist between refugees' sustenance and various products derived from the local environment. Refugees may depend on firewood and building poles from nearby woodlands, water from local aquifers or rivers, or crops grown on nearby farmland. In this way they rely on products derived from the surrounding environment for their day-to-day existence.

There are also a variety of indirect linkages between refugee well-being and the state of the local environment. If firewood becomes scarce, for example, refugees may turn to green wood that gives off harmful smoke and leads to acute respiratory infections. When water sources are over-used, refugees may turn to contaminated alternatives. If farmland is over-cultivated, then crop yields may decline, a particular concern in refugee settlements that are partly self-sufficient.

Environmental concerns are therefore an integral part of overall humanitarian assistance, and are consequently relevant to all agencies with a mandate to ensure the well-being of refugees and asylum-seekers.

The Importance of Cost-Effectiveness

Caring for the environment is important for economic as well as social reasons. Since 1994, per capita expenditure on refugee support has averaged US$220-270 per annum, a figure which often exceeds the amount of per capita assistance for general development assistance in either the countries of refugee origin or countries of asylum. This is explained by the fact that such assistance compensates for the separation of refugees from a productive base (especially farmland) and shelter. Rather than being a supplement, refugee assistance effectively has to replicate a support system, unless refugees are allowed by host governments to gain access to land and otherwise become integrated into the host country's economy.

It is therefore apparent that refugee support is relatively costly to the international community on a per capita basis. Given the scale of the expenditure involved, it is vital that available resources be spent as efficiently as possible.

Achieving Cost-Effectiveness

Refugee assistance operations have, to date, dealt with environmental pressures largely in a reactive way, with the first priority placed on peoples' security, food, health and shelter. Yet treating environmental impacts as an add-on, something to be tackled at a later stage, has been one reason why refugee operations are so costly for both the international community and host countries. Timely and deliberate environment-protecting measures can cost far less (and better help refugees) than a crisis-type response. Experience has shown that integrating environmental concerns into camp siting (Box 1) can be highly cost-effective.

Box 1. Siting of Refugee Settlements and Game Reserves

In 1996, a total of US$1.9 million was provided to rehabilitate Tanzania's Game Reserves most affected by the encroachment by Rwandan refugees (and a local population emboldened by the inability of the authorities to police the area). Another US$750,000 was provided in 1997 by UNHCR to further rehabilitate those reserves most adversely affected by refugee encroachment. Poaching also brought an abrupt end to revenue from private hunting ventures, formerly averaging US$100,000 per year in local and central government payments, and up to 10 times this total indirectly to support sectors of the Tanzanian tourism industry.

The need for such assistance, along with the significant loss of revenue, resulted in part from the location of the camps too close to a valuable ecological and economic resource. Of course, the camp establishment phase was a time of great pressure on limited resources and there were numerous conflicting demands. Nevertheless, had environmental arguments prevailed in siting the camps, or in their subsequent re-location, rehabilitation would have been largely unnecessary and hunting (and related) revenues would have continued to accrue.

Environmental interventions need to incorporate basic economic principles in order to achieve the goal of cost-effectiveness (Box 2). The free distribution of wood, for example, may only accelerate deforestation, whereas a comprehensive environmental management strategy focusing on 'wood for work' concepts, awareness raising, promotion of energy-saving practices and environmental planning might bring about the desired results and avoid a sense of dependency. UNHCR and its partners must be willing to apply some of the lessons learned from development activities, such as adopting integrated approaches and limiting 'handouts'.

Box 2. Approaches to Controlling Deforestation around Refugee Camps

Pressure of large numbers of refugees often leads to shortages and scarcity of fuelwood. Refugees and people from local communities are forced to walk longer distances to retrieve fuelwood. The search for wood rapidly changes from the environmentally benign collection of dead wood to cutting of live trees.

Supplying and distributing fuelwood from more remote, surplus areas is often seen as the most appropriate environmental response. Yet this approach has proven costly as well as relatively ineffective in some locations as, having obtained the minimum quantity of fuelwood required, refugees continue to collect wood either for additional consumption or to barter for other items. When this approach was applied in the Kagera camps, western Tanzania, the pattern of deforestation continued. Despite provision of US$1.2 million to supply wood, fuelwood consumption by the refugee population remained well above normal (pre-refugee) levels.

In most situations, a number of factors affect the pattern of fuelwood use (for example, the degree of fuelwood scarcity, the types of food refugees receive, traditions, availability of improved stoves, cultural acceptability of shared family cooking, etc). Rather than organising the free distribution of fuelwood, environmental objectives can be achieved more efficiently if, for instance, the wood supplied to refugees is exchanged for their participation in environmental activities ('fuelwood-for-environmental-work'). This approach has been used, with some success, in the Dadaab camps in eastern Kenya under the GTZ-RESCUE project.

Environmental Interventions to Enhance Benefits to Hosting Communities

It is often the case that refugee-related environmental impacts are superimposed on an underlying pattern of environmental change. Consequently, reforestation activities may, to varying degrees, compensate for pre-refugee or concurrent depletion. Environmental interventions should be seen as a component of broader efforts to minimise negative (and maximise positive) impacts on hosting communities. These interventions can also contribute to local development.

Many if not most organised refugee settlements are located far from population centres, in part for political and security reasons, in part to minimise the perceived risk of environmental and other damage. Isolation, however, does not guarantee environmental soundness. Refugee operations can create assets, not only deplete them. While population size and the carrying capacity of the hosting environments are critical factors, ultimately the arrangements put in place determine the extent of environmental damage. Depending on the structure of the hosting economy and the relationship between it and the refugees, different segments of the local population can benefit from newly built refugee facilities such as hospitals or schools. Refugees can also bring new skills and practices while providing an important source of labour.

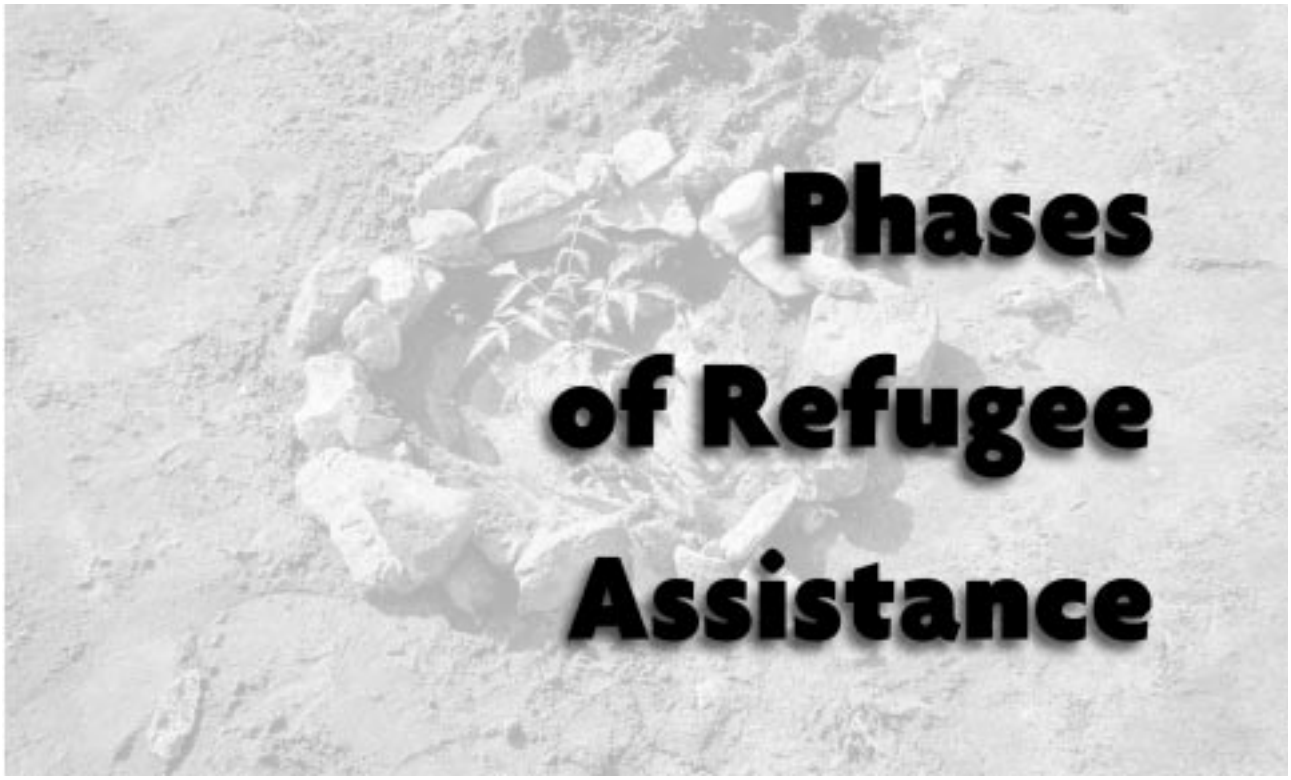
Newly built gamepost to help protect the Burigi Game Reserve from illegal hunting by local people or refugees.

Photo
UNHCR/L. Turner.
Burigi Game Reserve, Tanzania.

Conclusions

A healthy physical environment helps assure the well-being and protection of the refugee population. Experience in a variety of physical and socio-economic settings points to substantial gains (so far largely unrealised) associated with systematic and preventive approaches to environmental interventions in refugee assistance. It is worthwhile to consider, and spend small extra amounts on, the environmental design of activities at the earliest possible moment. The required interventions need not be costly or "high-tech." They may simply involve the promotion of sound environmental practices or management strategies.

In many cases, humanitarian operations which are environmentally sound are in keeping with development objectives. By adhering to wise environmental practices, relief-oriented organisations can promote activities which will lay the groundwork for more successful and sustainable durable solutions. UNHCR and its partners should be receptive to lessons learned from development programmes. By applying appropriate socio-economic principles to environmental management in the refugee context, stakeholders may also be expected to benefit.



Phases of Refugee Assistance

SECTION 1

Refugee operations span a number of distinct chronological phases. The emergency phase gives way to what is commonly termed the "care and maintenance phase", which in turn progresses towards some form of durable solution.

The first part of this Sourcebook considers a variety of lessons that have particular relevance at each phase of refugee assistance. An intermediary emergency-to-care and maintenance phase has been included so as to acknowledge the often blurred progression from relief-style operations to longer-term programmes following reduced external support and increased refugee self-sufficiency.

During the emergency phase, widespread awareness raising should be used to inform refugees of regulations governing the use of local natural resources. It is important to raise awareness immediately, before potentially environmentally unsustainable behaviour becomes established.

Photo
UNHCR/A. Diamond.
Zangal Pada Camp, Pakistan.

1.1 Emergency Phase

- ✔ Environmental issues need to be considered from the outset of a refugee operation: failure to do so may have widespread ramifications and prove costly to redress.
- ✔ Inclusion of environmental specialists in the emergency phase should result in improved environmental planning.
- ✔ Siting of camps or settlements should take into account proximity to areas of ecological importance, intended housing density and size of household plots.
- ✔ All site development activities should take into account the potential impacts of excessive clearance of ground vegetation, siting of infrastructure and development of roads.
- ✔ Funding appeals should include allocations for environmental rehabilitation and management.

1.1.1 Ensuring Prevention Before Cure

Environmental problems occurring in the emergency phase continue into other phases of refugee assistance and typically become more costly to address.
Action taken during the emergency phase is the key to pre-empting environmental problems and putting in place measures to avoid or reduce them. In line with UNHCR's *Environmental Guidelines* (1996), one of the principal themes of which is to encourage preventative measures, emphasis should be placed on introducing environmental considerations at the emergency response stage of any refugee operation. Problems, costs and conflicts related to environmental degradation are likely to be significantly reduced as a result of such an approach.

1.1.2 Contingency Planning for Refugee Sites

Environmental contingency planning should form part of the overall preparation for refugee emergencies.
In order to proactively address environmental concerns, a planning framework should be devised which treats environmental factors as an integral part of overall contingency plans for refugee emergency operations. Any delay in incorporating environmental considerations is likely to prove costly and attempts to tackle negative environmental effects later will be less effective.

If environmental management capacity can become an established standard during an emergency, environmental issues will be less easily overlooked and more consistently considered.
In order to cope with environmental management during an emergency, field-based environmental capacity should be strengthened. This requires institutional backing and should be included as an integral part of the emergency response. Assistance should be sought from people with a practical background in environmental management and an ability to work with an inter-disciplinary team.

Involvement of environmental specialists in the emergency phase is likely to lead to more sound environmental planning.
Given that environmental information needs to be assimilated, processed and presented quickly and efficiently during an emergency, the presence of an environmental specialist can be of considerable benefit. Such a specialist can contribute an environmental perspective to the diverse mix of interests at this crucial planning stage. When deemed impractical, guidelines should be provided that enable planners to gather the most essential environmental information.

Information on a small number of key environmental features is normally sufficient for contingency planning.

Environmental contingency planning need not be a complex and time consuming exercise. This is particularly important as not all emergency planners have environmental expertise. Using locally available information, it is normally necessary to identify:

- gazetted areas such as national parks, forest reserves and game reserves;
- other areas that are ecologically sensitive, including non-gazetted areas identified by government and community leaders as important to protect (e.g. wetlands, catchment zones or sacred forests);
- basic land cover classifications such as the main areas of forest, agriculture and settlement; and
- key water features – rivers, lakes and aquifers.

Appropriate environmental baseline planning information can normally be obtained from institutions within the host government.

Within the hosting country, foresters, agricultural officers or natural resource protection officers often have valuable local knowledge and information that can be used to develop an overall environmental picture of the potential refugee-hosting area. Maps, statistics, survey results and inventory data should all be consulted. The UNHCR Environmental Database has an extensive store of information collected from worldwide sources and various institutions including the United Nations Environment Programme (UNEP), World Food Programme (WFP), the Food and Agricultural Organisation (FAO), the World Conservation Monitoring Center and universities.

Clustered housing and shared facilities can promote group cooking among refugees; this can potentially lead to an overall reduction in the demand for energy.

Photo
UNHCR/ A. Hollmann. Ruvumo Camp, Ngozi, Burundi.

Pertinent baseline information should be presented clearly and simply.

Given that emergency missions tend to be rapid and often combine many disciplines, environmental information should be presented simply and succinctly to the wider audience. Time consuming, detailed surveys that present surplus information should be avoided.

1.1.3 Site Selection and Planning

It is important to undertake environmental screening of potential refugee sites.

Sites are selected once a variety of factors have been taken into account. While environmental impacts may at first appear relatively insignificant, they tend to feature more highly as the operation continues and damage to hosting areas becomes more severe, with associated implications for refugee health and/or the livelihoods of local communities. Each potential site should therefore be appraised from an environmental perspective before it is confirmed.

Natural resource mapping should be included in site planning.

Thematic or topographical maps (scales of 1:50,000 and 1:100,000) offer a relatively simple representation of natural resource issues; they do not require specialist training and can be used to screen possible settlement sites. The UNHCR Environmental Database can be accessed to provide field-based personnel with relevant maps of a region. Satellite images, however, should be collected during the emergency phase as they provide a detailed overview of a region and are particularly useful for future environmental monitoring. Unlike maps, however, satellite images require technical interpretation.

A refugee influx can stimulate new opportunities for income-generating activities which may have environmental impacts.

Photo
UNHCR/ D.A. Giulianotti.
Girdi Jungle, Baluchistan, Pakistan.

Involving relevant government environment departments in site selection will result in decisions which are more acceptable and environmentally sound.
Government representatives responsible for local natural resource management can bring valuable new perspectives, can often help assure government support for planning decisions, and should be part of all land use planning.

Adherence to simple, pre-defined physical planning specifications is an effective way to ensure that environmental problems associated with refugee settlements are kept to a minimum.
Careful camp siting and design can dramatically reduce the severity of environmental damage associated with refugee settlements. Recognising the range of constraints host governments and UNHCR need to consider, such as security of refugees and local populations, availability of water and access to roads, physical planners can help pre-empt problems.

Siting camps at least 15km from protected areas or other areas of ecological significance can better ensure the protection of important biological resources.
Refugees exploit wilderness areas if they are readily accessible, particularly for wood and animal products. This can pose a threat to biodiversity and ecological integrity. A minimum safe distance (buffer zone) of 15km has proven effective in safeguarding protected resources, being the approximate limit of day return journeys on foot by refugees.

Where refugees depend on local natural resources, camp populations below 20,000 are most environmentally sustainable.
Large concentrations of refugees in rural or remote areas tend to have more severe environmental implications than dispersed settlements with the same total population. Exploitation of natural resources by refugees is less easily controlled by local people, government or agencies when the number of refugees exceeds that of nearby communities. To achieve a more sustainable balance between population and resources, camp populations below 20,000 are more viable, as recommended in UNHCR's policy guidelines.

Where family plot sizes are large – 400m² or larger – there is a greater likelihood of sound environmental management taking place within a refugee settlement.
The larger the family plot, the greater the area for which families are able to take some management responsibility. A minimum area of 20 x 20m per household has been shown to allow some protection of biomass, particularly trees and bush, by refugees over an extended settlement period.

Potential use of facilities after the refugees' departure should be taken into account during the early stages of site planning.
Advanced planning for the future use of camp facilities and infrastructure can be important for the post-repatriation phase. Many refugee facilities, including clinics, schools, boreholes and administrative buildings, are potentially useful for local communities, but are often left idle if they are not located in areas where they can be used effectively, or if specific plans for their future use have not been agreed upon. Community involvement is important in such decisions.

Local settlement on a temporary basis is the preferred strategy from an environmental perspective.
Support for local settlement of refugees on a temporary basis can be more sustainable and desirable. Dispersed settlement has, in some cases, helped avoid problems associated with large refugee settlements.

1.1.4 Site Establishment

As much vegetation as possible should be maintained during site establishment.
Camp areas should never be clear felled. A minimum of woody vegetation should be removed during site establishment, leaving as much ground cover as possible to minimise erosion, control dust or mud, provide wood products for refugees and offer shade or serve as a windbreak. It may not always be necessary to destroy vegetation in order to meet the requirements of rigorous planning specifications or disease vector control.

Roads within sites should be aligned across slopes, not up and down them, to avoid gully erosion.
Poorly aligned roads can cause the formation of gullies which are a danger to people and livestock and can be costly to repair.

Clustered housing arrangements are a desirable energy-saving option.
One of the most effective energy-saving measures employed by refugees is the pooling of household cooking resources. Significant economies of scale can be achieved if the size of cooking groups is increased to six to eight people. Clustered housing arrangements, where groups of refugee shelters face each other across a small central area, are more likely to promote shared cooking between two or three households than are lines of shelters facing the same way. Socio-cultural factors should always be considered as these may support or hinder plans for clustered living arrangements.

Many environmental activities can begin immediately during the emergency phase, with a comprehensive environmental action plan to follow later.
It is not necessary to await a full problem analysis and environmental action plan before initiating emergency environmental activities. Certain activities can be introduced at the camp establishment stage without prejudicing subsequent strategies (see Case Study 1). These typically include tree marking (alongside enforcement of cutting restrictions), public awareness raising of rules and regulations, sourcing of construction materials, establishment of environmental co-ordination forums, and lobbying for inclusion of environmental considerations in all aspects of camp establishment ('environmental mainstreaming'). There may also be possibilities to influence decisions on food rations and utensils, especially to ensure that all cooking pots distributed are supplied with lids and, when supplied, that as much maize mill (rather than maize grain) is provided.

When new settlements are established, refugees must be informed of regulations regarding natural resource use.
Rules concerning natural resource use should be made clear from the outset. These may relate to tree cutting, charcoal making or management of wood harvesting areas. One strategy is to record each tree above a certain diameter on every refugee plot, and assign responsibility for their protection to respective families. This approach requires the timely presence of an environmental agency, working in collaboration with the camp management agency, and subsequent introduction of incentives and disincentives. Ideally, the refugees themselves should record all relevant information.

Large cooking pots with lids are more energy-efficient than small pots without lids.
Lids should be considered an integral part of kitchen sets. The use of lids saves 10-20 per cent of the energy used in cooking. Larger pots, of approximately 10 litres, facilitate shared or bulk cooking. There is an energy saving of up to 45 per cent associated with four people cooking together instead of two: such economies may not be possible if only small pots are offered. Bulk cooking can also reduce overall water requirements.

Case Study 1. Replicable emergency measures to protect the environment: Start-up programmes in western Tanzania.

From 1992 to 1997, Tanzania received over 800,000 refugees from Burundi, the Democratic Republic of Congo and Rwanda. The majority entered the country in two waves, the first to Kagera Region in mid-1994, the second to Kigoma Region in late 1996. Despite widespread local harvesting of fuelwood and building materials, environmental concerns were not at the fore in either case due to the sheer number of refugees involved and the speed with which people fled to Tanzania, demanding a rapid relief response simply to meet basic needs. Nevertheless, UNHCR and its implementing partners, particularly GTZ and CARE, were still able to implement a range of successful measures during this period which limited the scope of environmental damage around new settlements.

Establishment of co-ordinating forums was considered a priority in both refugee-hosting regions. Chaired initially by UNHCR, responsibility for the Environmental Task Forces (ETFs) was later transferred to the District governments. The ETFs enabled international agencies, local NGOs and government departments working on environmental issues to harmonise approaches, and for UNHCR and the government to communicate environmental guidelines and policies that were to be applied.

In Kagera, marking trees that were not to be cut with white oil paint was found effective if used in conjunction with a network of forest guards. Selected trees were not necessarily the largest trees, but those with the greatest potential for rapid growth and seed production – often the younger specimens. For greater effectiveness, forest guards persuaded refugees to spread their cutting as thinly as possible in both regions, and to prevent cutting in some areas.

Careful sourcing of construction materials was also promoted in Kagera and Kigoma; UNHCR and the ETFs established guidelines for the types of trees to be used and recommended source areas. These tools were more effective around smaller camps where harvesting could be better controlled. Meanwhile, agencies benefited from clear guidelines on where they could procure building poles for new structures.

Multilingual signs and posters as well as refugee meetings were used to communicate host government rules and local community traditions regarding access to natural resources. This helped establish an appropriate sense of environmental responsibility amongst the refugees, especially in Kigoma, immediately upon their arrival.

Implementing agencies, meanwhile, continued to monitor and actively influence decisions relating to camp siting, size, density and layout, rations provided, cooking utensils and other factors that might have environmental impacts.

Addressing the supply of firewood and construction materials should be a priority in the site establishment phase.
During an emergency, refugees primarily harvest fuelwood and construction materials which can have an immediate and significant impact on the local environment. As harvesting methods, building styles, cooking systems, source areas for wood and the overall supply systems become quickly established, and are later difficult to modify, consideration should be given at the outset

as to how fuelwood and construction materials are to be procured and used by refugees. The impacts of short-term tree cutting for building refugee shelters can be serious, and will vastly out-strip firewood demand for the first few months. An early investigation of appropriate housing design should be a priority. For example, mud brick shelters can have considerably less impact than wood frame huts.

Fuelwood continues to be the most common and familiar form of domestic energy for many households, and particularly refugees, worldwide.

Photo
UNHCR/ R. Le Moyne.
Banja Luka, Bosnia.

Water harvesting measures should be built into all camp structures in low rainfall areas.
At little additional cost, rainwater can be stored and later used by refugees for tree planting and in kitchen gardens. Construction budgets should therefore include appropriate provisions for collection and storage systems – often nothing more than the inclusion of guttering and tanks.

1.1.5 Emergency Environmental Funding

Environmental budget requests should form an integral part of special funding appeals.
In order to ensure efficiency and effectiveness in environmental protection, and as part of the process of mainstreaming environmental concerns in refugee operations, environmental funding allocations should be included in emergency funding appeals. Funding should be flexible so that re-allocation to different sub-activities according to needs is possible at a later stage.

Emergency environmental funds should cover process and practicalities.
There are two main areas of need in the emergency phase – that can be labelled 'process' and 'practicalities' – and the environmental budget should cover both. Process relates to co-ordination, consultation, collection of baseline data, information sharing, the establishment of environmental forums, problem analysis, environmental planning and the process of influencing policy. Practicalities cover actual implementation of emergency activities in the field, such as tree marking, enforcement of cutting restrictions, public awareness raising and sourcing of construction materials.

Emergency environmental funding needs to remain flexible.
It is likely that initial site selection and establishment, as well as the first set of environmental interventions that go with it will, in time, prove imperfect or inadequate. Activities may need to be modified. Given pre-defined budgets and project documents this can be difficult, particularly when budgets have been sub-divided in some detail according to different accounting codes. It is important that a high degree of flexibility is incorporated in emergency environmental programmes and, as such, the budgetary system should allow for re-allocation of resources at short notice as the evolving situation dictates.

1.2 From Emergency to Care and Maintenance

- ✔ Environmental concerns need to be carefully defined and recorded: a range of technical expertise should be sought for problem analysis and definition.
- ✔ UNHCR and partner organisations may, through experience, lobby governments to adopt certain practices which have been found to reduce negative environmental impacts in other situations.
- ✔ Emergency Environmental Action Plans should be prepared at the earliest opportunity and should complement overall emergency management. Such plans should be flexible.
- ✔ Baseline environmental data is of considerable importance for planning and later rehabilitation. Data collection should take into account information already held with local institutions.
- ✔ Environmental activities of different organisations require co-ordination. Working forums should be established with representation of all stakeholders.

1.2.1 Environmental Problem Analysis Following Site Establishment

Clear definition and analysis of environmental problems is essential for the design of a successful mitigative strategy.

The nature of environmental problems needs to be clearly defined and understood at the camp establishment stage. For example, simplistic conclusions that deforestation is likely to be the main problem are likely to lead to equally simplistic responses. Any analysis undertaken must be rapid, but technically competent. An example of an appropriate and targeted environmental problem analysis that led to responsive action is provided in Case Study 2.

Multi-disciplinary approaches are more likely to lead to accurate problem definition and analysis.

The creation of a team offers the best means to pull expertise together although it is often more practical and cost-effective to identify one person with the right background and environmental overview. For example, deforestation around a refugee camp can be part of a more complex problem, the solution to which requires an understanding of the interactions between peoples' needs and behaviour and the local environment. A wide range of additional expertise may be needed for larger and more complex operations, such as hydrology, engineering, water quality and wildlife management.

Problem analysis that is overly influenced by the known expertise of any one actor may lead to narrowly defined approaches.

Environmental problem definition should be carried out objectively, rigorously and efficiently by a multi-disciplinary team, or a suitably skilled individual, at an early stage. Analysis, however, should not be dominated by the known expertise of the proposed implementing partner at the expense of the actual problems at hand. It may in fact be preferable to identify an implementing agency after the problem analysis is complete and the skills required are clarified.

Clear environmental problem definition is vital to develop cost-effective responses.

Environmental problems need to be carefully defined in order to develop appropriate and effective responses (see Case Study 3). Deforestation, for example, might have numerous causes such as an increase in environmentally unsustainable income-generating activities or insufficiently defined regulations on access to resources. Likewise, tension between refugees and local com-

munities can be attributed to refugees' benefiting from improved services (refugee hospitals and schools) or rapid natural resource depletion. Clear problem definition can lead to more appropriate responses that may range from environmental activities (e.g. reforestation and promotion of energy-saving practices) to broader development-type interventions.

Case Study 2. Getting to the root of the problem: A targeted response to deforestation in Zimbabwe.

With the right experience, local knowledge and common sense, it is possible to undertake a problem definition and data collection exercise which can be applied in a short time frame.

From 1984 to 1993, some 250,000 Mozambican refugees fled to Zimbabwe. Five camps were established in communal areas in the eastern districts to accommodate 150,000 people. The camps were deliberately placed in remote areas, most of which had reasonable amounts of woodland. The presence of refugees soon began to have a negative impact on these woodlands and, by 1991, the immediate surroundings of all camps had been largely cleared of vegetation. Women were reported to be travelling up to 20km in search of firewood.

The Fuelwood Crisis Consortium (FCC) was established in 1991 to address issues of worsening deforestation around the camps. Comprising several refugee assistance agencies, as well as government and non-governmental bodies involved in environmental management elsewhere in Zimbabwe, FCC sought to identify the underlying cause of deforestation. FCC felt that large-scale surveys and inventories were unnecessary. Deforestation was clearly a huge problem; quantifying the extent of that problem would be a costly, time consuming and ultimately pointless exercise.

Before any studies were undertaken, it was assumed that fuelwood collection was the largest contributing factor to deforestation around the camps. Clearing land for agriculture was, in this case, not an issue. Refugees were forbidden to cultivate land outside the clearly demarcated camps and this was strictly enforced by local communities.

The amount of wood consumed for cooking, heating, lighting, beer brewing and others activities was measured through a series of targeted studies. Fuelwood consumption was measured for 50 sample households in each camp over a five day period; a questionnaire survey was also administered in an attempt to qualify the information. Further research was done in the camps to complete the picture of energy consumption patterns.

The studies revealed that fuelwood consumption in the camps was high (averaging 14kg per household per day); 70 per cent of this consumption was accounted for by cooking. Although refugees were already employing basic fuel-saving techniques (such as putting out fires after cooking and building wind-breaks), there was a need for improved fuel-saving technology. In response, FCC initiated an integrated programme of stove dissemination, tree planting, and environmental awareness raising designed to link these two efforts and develop a broader understanding among refugees of their capacity for improved environmental management.

Given time limitations, it is important not to duplicate previous data collection exercises, but rather to identify secondary data sources wherever possible.

Refugee-hosting areas can often provide information on local natural resources which is particularly useful (and necessary) when it is not possible to gather original data during the emergency phase. Further background material may be available at the regional or national level.

The host government should be represented in environmental project design.
The host government is often responsible for supporting and monitoring projects in refugee-hosting areas. Government representation in project identification is therefore highly recommended.

Case Study 3. Defining the problem: A successful social response to apparent environmental conflict in Nepal.

Environmental conflicts can arise in a refugee-hosting area between refugees, local people, the host government and relief agencies. There may be competition for firewood or building material, for example, and local forests may come under threat. Yet the cause of these conflicts can be more complex than it may first appear. While environmental issues may be the most obvious and easily defined problem, an effective response need not necessarily be directly environmental. Local people and the host government may have other development priorities that could be addressed, easing the tensions that exist in a more constructive and targeted way. UNHCR responded to environment-based conflicts in this broad-based manner in Nepal, with successful results.

The arrival of some 90,000 Bhutanese refugees in south-eastern Nepal led to some resentment on the part of local people and the government. Pressure on forests in this, one of Nepal's most densely populated regions, was already severe; the refugee influx quickly brought environmental concerns to the fore. Although the environmental impacts of the Bhutanese refugees were never quantified, or local concerns about environmental damage justified, the working situation was difficult for UNHCR and the refugees.

At the request of the government and local communities, and in consultation with concerned government technical departments, UNHCR developed a portfolio of project ideas that became known as RARP – the Refugee-affected Areas Rehabilitation Programme. The RARP objectives were to contribute to sustainable development, reduce and repair environmental damage, provide labour opportunities and improve infrastructure. Unofficially, it was hoped that this multi-sectoral programme would also improve local working relations and achieve some balance in levels of service offered to local people and refugees.

RARP developed into a set of mini-investment projects focused on infrastructure. The projects were proposed and supported through a process of solicitation with local leaders and government. There was a focus on road improvement, river bank protection and the construction of sub-health posts, all development priorities of the local people. Another component directed through the District Forest Offices assisted with the development of plantations, tree nurseries, ranger posts, fencing and strengthening of operational capacity.

Overall, this programme has assisted in easing tensions between refugees and local people, and between UNHCR and the Nepalese government. This has been aided by other factors such as the compatibility with local people (ethnic, religious and social), sympathy with the refugees' democratic cause, and the physical spread of the caseload over many relatively small camps. This example makes it clear that problems that seem to stem from environmental damage need to be carefully investigated before a response is introduced. As in this case, dissatisfaction may be expressed as a concern about environmental damage, but closer investigation reveals broader ill feelings associated with disproportionate levels of service, loss of jobs to refugees, or other more general problems.

1.2.2 After Problem Analysis: An Emergency Environmental Action Plan

UNHCR should co-ordinate the preparation of action plans; agencies with natural resource management expertise should plan activities with the host government and local communities.
While UNHCR, as the lead refugee agency, may chose to co-ordinate the creation of an environmental action plan, a selected agency (or agencies) with expertise in natural resource management should work with government representatives to operationalise the plan.

UNHCR and its partners may find it effective to assume a proactive role in influencing host government decisions to adopt approaches that have been found to be successful, even where they contradict prevailing policy.
UNHCR and its partners have worked with refugees throughout the world and have built up considerable institutional knowledge on the most cost-effective and efficient ways to provide assistance to refugees. If UNHCR and its partners were to remain "reactive", there would be little scope for applying lessons learned elsewhere. Effective environmental activities therefore need to encompass policy and advocacy work as well as field level technical interventions.

Any 'environmental' item intended to benefit refugees (such as improved stoves, tree seedlings or firewood) should, in principle, be earned rather than given. To ensure sustainability, refugees should be involved in the design and construction of energy-saving technologies, made locally using local resources.

Photo
UNHCR/W. Stone.
Dadaab Camps, Kenya.

Problem identification should be action-oriented.
Environmental problem analysis should lead directly to an environmental action plan which identifies key areas of concern that need to be addressed, possible interventions and, most important, an indicative budget. Ideally, environmental action plans should facilitate and not constrain emergency management. They must be flexible, bearing in mind the rapid nature of the problem analysis on which they are likely to have been built.

Action plans should be flexible enough to allow modification of objectives and activities on the basis of new information that becomes available.
Project planning and implementation should be dynamic, thus allowing alternative or more sophisticated strategies to be employed at a later stage. This implies flexibility in funding and activity definition within project periods.

By adopting a long-term land-use strategy for each refugee settlement, it is easier to design appropriate activities in the shorter term.
Environmental strategies should, to the greatest extent possible, attempt to develop a long-term environmental vision for each refugee site. For example, consideration should be given to the area's vegetation – is this to be returned to its original state, or is conversion of land to agriculture to be expected? Such strategies should be determined in conjunction with local people and government.

Local community priorities should be incorporated into the action strategy.
Consultation with local communities is important during an emergency, and becomes essential if medium- to long-term sustainability is to be assured.

Deforestation can sometimes lead to positive environmental change.
Depending on the value of the affected resource, deforestation is not necessarily negative in cases where new and more productive vegetation types are released within an area (e.g. pasture for grazing).

In Nepal, refugees from Bhutan manage distribution of food rations. This approach has proven to be cost-effective and can be used for a range of other goods and services.

Photo
UNHCR/H.J. Davies.
Sanischare Camp, Morang District, Nepal.

A medium-term environmental plan should include land use planning.
In medium-term environmental planning, it is appropriate to undertake a simple land use zoning exercise to map the extent of the areas where different activities are to be implemented. This may even include physical demarcation between different areas. Planting exotic tree species along the boundaries of forest reserves, for example, can serve to demarcate a protected zone and deter encroachment.

1.2.3 Collection of Baseline Environmental Information, Monitoring and Evaluation

The collection of baseline environmental data in the emergency phase greatly facilitates subsequent impact assessment.
Knowledge of the baseline environmental situation is essential for developing environmental action plans and monitoring refugee impacts. If the baseline environmental situation prior to a refugee influx is known, a realistic assessment can be made of the refugees' impacts on natural resources, or the impact of mitigative measures, up to the time of repatriation or settlement. Remote sensing techniques can be extremely useful for this information.

Appropriate baseline information is a prerequisite for planning and implementation of rehabilitation activities towards the end of the programme.
Accurate details on the pre-refugee situation are not only useful for impact monitoring, but also enable those responsible for developing longer-term plans for rehabilitation or integration to base their vision on knowledge of what natural assets existed at the outset.

Environmental planning demands increasingly sophisticated environmental data and re-appraisal of the problem analysis.
Environmental planning requires detailed information. The site selection exercise will often be a rapid assessment based on information available at short notice in the field. Development of an action plan will demand more comprehensive knowledge of local and regional environmental issues. Not least, such information is needed to gauge the seriousness of any anticipated environmental impacts, and to target a response of appropriate scale and scope.

Comprehensive data collection is needed to effectively guide, monitor and evaluate environmental interventions and requires qualified staff and resources.
After a refugee influx, it is important to have reliable information on issues such as refugee wood consumption, rates of tree cutting, types of cooking systems and their efficiency, and the effect of diet on energy demand. Such information is useful not only for project design, but in modifying and re-orienting activities during a process of ongoing monitoring and review. In addition to attracting qualified staff and resources, consideration should be given to training and supporting a local agency for the collection of such information.

Research and monitoring requires dedicated budgets.
Money should be set aside in project budgets to allow for the establishment and operation of basic research and monitoring systems. Otherwise, such systems are likely to be inconsistent and incomplete. Research and monitoring activities can be implemented by an outside environment agency and progressively handed over to local institutions.

Geographical information system technology has an increasing number of appropriate applications in field-based data collection and monitoring.
Availability of smaller and less costly geographical information system (GIS) hardware and software has opened up a variety of opportunities for improved environmental data collection and management in refugee operations. Hand-held global positioning system (GPS) units are now readily available and can be used for mapping and recording co-ordinates of geographical features of camps and their surroundings. Such units can provide digital input for computer-based mapping programmes, many of which can be operated on personal computers with relatively low specifications. The ability to generate new information and produce simple maps at low cost can make a valuable contribution to monitoring and evaluation.

The use of remotely sensed data is a valuable environmental monitoring tool to supplement ground observations in refugee situations.
Where possible, field observations on damage to the environment by refugees can be complemented with satellite imagery, aerial photography and aerial video. Satellite imagery is particularly useful for obtaining a detailed overview of a region and its landuse/environment components. With technical interpretation and if obtained at the start of the influx, satellite images can provide comparative studies on the evolution of vegetation cover prior to, during and after refugee influxes. Advantage should be taken of UNHCR's Environment Database which has an extensive store of information collected from worldwide sources and various institutions.

Environmental projects require monitoring and evaluation systems that go beyond financial accounting.
Measures must be put in place which help to determine the appropriateness and effectiveness of environmental interventions beyond quantitative outputs. Specific indicators of the expected impact of each project activity should be identified and followed up.

Environmental indicators should be kept simple, few in number and based on readily available data.
Given that indicators must be collected in the field as part of ongoing project implementation and monitoring, they should be carefully chosen to make the process easy to administer. A small number of indicators is best, ideally depending on data that are readily available.

Field level indicators are most appropriate for monitoring and evaluating environmental activities.
Environmental indicators should primarily be identified and measured at the field level, not at the level of national office or donor headquarters. Environmental impacts are best judged at the local level by those familiar with the project components: indicators should therefore be identified at the level at which implementation is taking place. Local communities and, where possible, refugees should be implicated with the selection and monitoring of environmental indicators.

Addressing the supply of firewood and construction materials should be a priority in the site establishment phase.

Photo
UNHCR/ A. Hollmann.
Ruvumo Camp, Ngozi, Burundi.

Environmental data should be made available to responsible national authorities.
Environmental data gathered during refugee operations should be made available to responsible national authorities in order to avoid stand-alone data sets and prevent duplication of effort. Contact should also be established with potential partners at the earliest opportunity to access existing data sets. As monitoring indicators will form an integral part of future activities, this combined package should be presented to national authorities in respective countries.

1.2.4 Ensuring Inter-Agency Co-ordination

Conflict may arise over the need to act quickly to address environmental concerns, and attempts to ensure proper co-ordination, efficiency, technical competence and monitoring.
The emergency phase demands the fielding of appropriate environmental expertise, leading to the development of a coherent environmental action plan based on problem analysis. Yet at the same time, co-ordination, co-operation and integration with other activities remain essential. A balance is needed between rapid technical response and broader and more careful integration. For this reason, the establishment of environmental forums at an early stage is considered essential.

Working forums for environmental stakeholders should be established or strengthened.
Local participation and active involvement in environmental activities is vital for the sustainability of project activities that have direct or indirect benefits for local communities, improving refugee host relationships, as well as working relations between governments and refugee agencies. This can take the form of environmental working groups, task forces, roundtables or similar, which have clear representation and the active participation of all stakeholders. Such forums may already exist in local government, in which case a process of identification and institutional strengthening may be needed. UNHCR should participate actively in any pre-existing forums.

The role and composition of environmental forums is site-specific.
The actual function and powers of environmental forums will be site-specific, and may or may not include decision-making responsibilities. Refugee and local communities should be represented in any environmental forums. In larger or more complex refugee operations, it may be appropriate to establish several forums, with technical sub-committees, in order to provide sufficient opportunity for broad-based input from stakeholders. In some cases it may prove politically difficult to instigate formal linkages between refugees and local people for discussing and solving environmental conflicts or other problems, but informal arrangements can usually be developed.

1.3 Care and Maintenance Phase

- ✔ Planning and budgeting for post-environmental rehabilitation needs to be considered as early as possible.
- ✔ Income-generating activities should be addressed during project design.
- ✔ Appropriate incentives should be set in place to encourage refugees and local people to become involved in sustainable environmental management. Disincentives such as taxes or fines may need to be implemented.
- ✔ Provision of incentives should, to the extent possible, be based on cost-recovery concepts.
- ✔ Implementation of environmental activities should include measures to address a refugee's rights to use certain resources.
- ✔ Settlement within local communities is preferred over camp situations from an environmental perspective.

1.3.1 Project Design and Financing

Mainstreaming environmental concerns can include building environmental interventions into the project design and operating budget of camp management and community services agencies.

UNHCR or donors should proactively promote the integration of environmental protection activities in their initial submissions. An expert environmental agency should be sought for technical advice.

1.3.2 Income-generating Activities

A refugee influx can stimulate new opportunities for income-generating activities which may have environmental impacts.

Refugee settlements provide new skills, labour and markets. A variety of new or expanded income-generating activities are likely to develop. Some of these, for example sale of firewood, expansion of agriculture, stone crushing, lime burning or charcoal making, may have environmental implications as they directly depend on local natural resources.

Income-generating activities should have broad objectives and include more than paid labour.

Refugees are often employed on a short-term basis to carry out environmental tasks, for example as nursery attendants, forest guards or extension workers. Other initiatives should be put in place that promote longer-term and more sustainable income-generating opportunities.

Income-generating activities can include the sustainable use of natural resources.

Adding value to natural resources can help in their protection. It may also provide a variety of income-generating possibilities for refugees and local people, such as honey collection, tapping for gums and incense, or collection and sale of animal fodder.

Disincentives can minimise adverse environmental impacts.

Income-generating activities which are environmentally damaging are often difficult to control through regulation. Disincentives such as levies or licences or the promotion of attractive alternatives are more likely to lead people away from activities which may have negative environmental impacts.

Under conditions of fuelwood scarcity, refugees may need to travel longer distances to collect wood. In some areas, this may increase the risk of assault, particularly against women and children.

Photo
UNHCR/ H. Timmermans.

1.3.3 Economic Incentives for Sound Environmental Behaviour

While cash incentives can change behaviour, they are not sustainable.
While cash is often the strongest incentive for participation in environmental activities, such as tree planting, it tends to be unsustainable, promotes disproportionate involvement of men, and can be unpopular with local people and host governments who see refugees profiting from damage that they may have caused. At the same time, paid labour does not always fully address the underlying causes of degradation. Its use should therefore be temporary and form part of a planned progression to more sustainable alternatives.

In the long-term, community participation in environmental management is dependent on sustainable incentives for individuals.
Effective and sustainable environmental management and rehabilitation activities in the longer-term require a detailed understanding of the incentives and motivations for refugees or local communities to become involved in such activities. Such incentives revolve primarily around long-term rights of access to natural resources, and any benefits accrued from them, in addition to the perceived magnitude of these benefits. Environmental activities should seek therefore to maximise the benefits to the individual without compromising environmental sustainability.

Incentives can take many forms, as long as they are seen as desirable by refugees.
Non-monetary economic incentives can include a range of environmentally-friendly commodities which bring financial benefits to the recipients. These might include fuel-saving stoves (where energy is monetised), firewood and various essential household items that would otherwise have to be purchased. Issues of sustainability and ownership are important, and it is preferable to confine such incentive-based work within clearly specified limits and to camps and their immediate area. An example of the successful use of incentives in a refugee environment project is given in Case Study 4.

Incentives should, as far as practical, be based on cost-recovery concepts if interventions are to be sustainable. Exceptions should be made for vulnerable groups.
Cost-effectiveness is an important concept to apply in refugee environment programmes. A balance must be found between the cost of interventions and the estimated value of natural resources conserved, regenerated or established. Funds to protect low value resources might be more wisely invested in projects which have been chosen by the local community and host government.

Implementation of environment programmes should be accompanied by measures to address the issue of refugees' usage rights of natural resources.
It is not realistic to expect refugees, or indeed any community, to care for their local environment without addressing user rights to the area's natural resources. It is not always practical to expect host governments to designate land for the exclusive use of refugees, particularly in the short-term, outside the actual limits of their settlement. Nevertheless, the adverse environmental implications of limiting refugee user rights should be made clear to governments in order that they might make considered decisions relating to access and usufruct.

Commercialisation of wood and other natural resources promotes greater efficiency in their consumption.
When natural resources take on a (usually monetary) value they tend to be used more carefully by refugees and others. Commercial opportunities can be sought by adding value to natural veg-

etation (e.g. honey, gums, medicines and animal feed), or by introducing taxes, levies and licence fees for those trading in natural products. An environmental commodity – tree seedlings, stoves or firewood – should not be provided without some commitment in return from refugees (see Case Study 5).

Commercialisation of natural resources may be to the disadvantage of vulnerable groups. Under the right conditions, monetisation of natural resources can help in their protection and reduce consumption. However, monetisation might create a difficult financial burden for some members of the refugee population. Nutritional status, for example, can be adversely affected if firewood procurement becomes more difficult. Monitoring of household coping strategies is therefore an important component of any commercialisation strategy in order to detect particular cases where refugee well-being may be adversely affected.

Case Study 4. The use of incentives to double environmental benefits: GTZ-RESCUE and the Somali refugee programme in Kenya.

The three camps of Dadaab in Kenya's North Eastern Province are home to 120,000 mainly Somali refugees. While the refugees are accustomed to the climate, the terrain and the pastoralist lifestyle in Dadaab, they were unfamiliar with the concentration of people within a fixed area. The majority may traditionally have been used to coping with water shortages, but had little prior exposure to competition for wood products and the associated need to conserve energy and protect and plant trees. The result was rapid depletion of firewood, construction materials and live fencing from around the camps, and over-exploitation of grazing areas.

In response to this depletion of natural resources, the Rational Energy Supply, Conservation, Utilisation and Education (RESCUE) Programme was started by GTZ in Dadaab in 1994. Its goal was to reduce negative environmental impacts by working with refugees and local people in energy conservation, tree planting and educational initiatives.

Recognising the refugees' limited knowledge and experience in sustainable natural resource management, the RESCUE programme set out to use incentives to encourage tree planting around refugee households. Seedlings raised in camp nurseries were distributed to refugees for compound planting, and incentives offered to ensure their survival. The incentives, known as exchange commodities, comprised different types of wood-burning stoves. The more trees surviving, the better the type of stove provided to the family. As the project developed, stoves were also offered to refugees in return for contributions to other environmental tasks, such as erecting live fencing around protected regeneration areas or digging micro-catchments for water around trees planted within these areas. Further exchange commodities were also tried, including solar cookers, haybasket cookers and, at the request of refugee women, vacuum flasks to keep drinks warm.

The exchange commodity programme has resulted in the planting of 650,000 trees, with a 70 per cent survival rate, mainly in private compounds where they can be harvested by the refugees who planted them for firewood, fodder, fruit and building materials. Over 30 hectares of land have been enclosed with live fencing for natural regeneration. In return, some 29,000 improved ceramic stoves of various designs have been given to refugees, with a possible average energy saving of 20 per cent for each family.

Exchange commodity projects such as this can double environmental benefits, both through the activities undertaken by the refugees and the types of commodities awarded to them. Such projects do, however, depend on external donor support throughout to supply the commodities that refugees earn. Incentive-based projects are especially suitable for refugee communities whose prior experience with sound environmental management is limited.

Case Study 5. Conserving resources by guaranteeing economic benefits: Wildlife management by returnees in Mozambique.

Adding economic value to natural resources can improve the chances of local people managing them sustainably. An example from a war-damaged returnee area in western Mozambique shows how wildlife is being protected by local communities who now derive economic benefits from conservation.

Following the end to civil war in 1993, a number of returnees arrived in Mágoè District, north-west Tete Province, from Zimbabwe and Zambia. Prior to the war, Mágoè District was renowned for its wildlife. Widespread poaching during and after the war, as well as the presence of a commercial game hunting operation, had considerable impacts on the region's wildlife.

As a result of increasing conflicts between the hunting operator and local communities – the latter receiving few benefits from the hunting operation – the operator sought to control poaching by taking the law into his own hands. Meanwhile the local administration was found to be heavily involved in illegal hunting of wildlife for meat and ivory, such that it had little credibility as a resource manager.

In an effort to address these growing problems, wildlife officers proposed the formal inclusion of local communities in the management and benefits of the wildlife resources, as had been tried elsewhere in southern Africa – notably in Zimbabwe's CAMPFIRE programme. The response in 1994 was the initiation of a programme called *Tchuma Tchato* ("Our Wealth"), a community-based wildlife management programme aimed at empowering the local community to manage wildlife resources profitably and sustainably. Covering five villages, the project was implemented by the National Directorate of Forestry and Wildlife, and directly funded by donor agencies.

Having gained the trust of local people by listening to their concerns and the problems they faced with the hunting operator, the project focused on institutional capacity-building at the local level. Local Natural Resources Councils were formed, including representatives from the main political parties, village authorities, and the traditional (ancestor spirit worship) and modern (church) religious systems.

One of the main objectives of the project was to secure financial benefits from the commercial hunting operation for the communities of *Tchuma Tchato*, in the hope that this would provide them with a direct financial incentive to sustainably manage wildlife. With government support, the operator's trophy fees would be split between the central finance ministry, the provincial administration and the community. In 1996, the villages were able to share the first cash dividend from hunting: US$12,000 was distributed in person by the Mozambican Prime Minister – part of the proceeds being used to purchase a grinding mill.

Since the introduction of the project, poaching has declined significantly, wildlife has increased, and community enthusiasm for wildlife management has grown. The hunting operator, though initially reluctant to enter into agreements with the community, now accepts that the arrangement has benefited both parties – his benefit being a reduced level of poaching. The programme has also supported the establishment of village level councils, a new departure within Mozambique in terms of allowing communities to articulate their needs, devise management objectives for their development, and manage development in a manner that is both participatory and inclusive of all community members.

The *Tchuma Tchato* programme has shown that returnee communities, once organised and provided with incentives, can effectively manage natural resources in their local areas. These incentives are based largely on direct benefits to participating individuals. Replication of such systems would appear viable to protect a variety of natural resources.

Commercialisation of natural resources can be environmentally damaging if not properly regulated.

While the commercialisation of natural resources can assist in their protection, most notably in cases where usufruct is assured and community-based protection is therefore more viable, the possibility of gaining income from resources can lead to their over-exploitation. This is especially the case where the refugee population is high in relation to the availability of natural resources needed to support them. Under these conditions, alternative income-generating opportunities need to be explored, simultaneously reaching local agreement on how to reduce over-harvesting. The right mixture of incentives is needed to persuade resource users to forego voluntarily access to natural resources on which their livelihood depends.

1.3.4 Temporary Local Settlement

From an environmental perspective, settling refugees with local communities is preferred over camp situations.

Settling refugees within local communities can create conditions for sustainable natural resource management, even where a refugee influx leads to drastic population increase and where this influx may be close to ecologically sensitive areas. Local communities can exert greater control over the activities of refugees if the latter are more sparsely distributed (see Case Study 6). Any damaging activities are also likely to be less concentrated. Furthermore, local settlement brings with it the notion of security to accessing natural resources which is likely to contribute to more favourable environmental management on the part of the refugees.

The likelihood of dispersed settlement by refugees, although environmentally desirable, tends to be pre-determined by institutional and social controls and is thus difficult to influence.

A number of conditions favour local settlement by refugees. Given that dispersed local settlement has strong environmental advantages over camps, it is important to be aware of typical prerequisites for local settlement to occur and, once established, for these settlements to be successful. These are:

- the active support of the host government for settlement;
- close social and/or ethnic relations between refugee and host communities; and
- provision of external assistance to the local population as well as to refugees.

Any settlement arrangement for refugees has to be made at all levels and involve all stakeholders.

It is particularly important that refugees and local community members be directly involved in making settlement arrangements to ensure appropriate use of local resources and minimise the risk of conflict. Other stakeholders will normally include UNHCR and government authorities. Such broad consultations, not confined to discussion between the host government and the refugee agencies, can help promote mutually agreeable management systems between local people and the settling refugees.

Case Study 6. Dispersed refugee settlement: Reducing environmental problems in Guinea.

A sparsely populated country of around seven million people, Guinea has experienced two major refugee influxes in recent times. Since late 1989, a total of 630,000 Liberians and Sierra Leoneans have settled in the south-eastern corner of the country. This influx has been unusual in that the refugees have had limited external support and have been largely integrated within local society. Many settlements had a ratio of more than 3:1 refugees to local people, and some as high as 6:1. Nevertheless, no settlement became excessively large, and local people retained control over natural resource management in the hosting areas. This provides an interesting example of how a large refugee flow does not necessarily lead to widespread environmental damage, if refugees are sufficiently dispersed and can be effectively controlled by local people.

The dispersed nature of refugee settlement along a zone of some 400km meant that the use of local natural resources by refugees did not develop into a free-for-all. Strict rules were applied by receiving communities and, in general, the use of land and vegetation by refugees was only permitted in exchange for cash or payment in kind (such as through labour). Local people had traditional agroforestry management techniques and a long tradition of sustainable management of natural resources; refugees were obliged to adhere to the same basic framework in their exploitation of the areas where they settled.

Some problems were, however, inevitable. The massive population increase was bound to have a negative effect on fallow periods and bring greater demands for forest products such as fuelwood and building materials. Traditionally, the people of south-eastern Guinea lived under a system of shifting cultivation. By the 1980s, however, local population growth and an influx of migrants from the north placed enormous pressure on this system. Fallow periods grew shorter, inhibiting the return of nutrients to the land in between cropping cycles. The arrival of so many refugees exacerbated these problems. To relieve this pressure, UNHCR and the Guinean government developed a proposal to open up unused swampland for refugee cultivation, under arrangements with local communities. In an attempt to take pressure off upland forests and other fragile areas, 4,500ha were developed up to 1997.

While it is clear that a large influx of refugees such as that seen in Guinea is bound to lead to a range of negative environmental impacts, these impacts can be minimised and better controlled where the refugee population is dispersed. This allows local people to exert greater influence over refugee behaviour, and ensures that local customs are more closely followed with regard to exploitation of natural resources.

1.4 Voluntary Repatriation

- ✔ Access to land is of fundamental importance in areas of refugee return.
- ✔ Interventions to facilitate re-integration should address returnees and local communities.

Environmental forums are desirable in countries of origin.
Environmental groups should be established (or strengthened) in returnee areas in countries of origin, bringing together the local population, government representatives and returnees to handle environmental issues as they develop. These forums are required at an early stage to ensure subsequent commitment to any returnee project, its co-ordination and timely implementation.

Local organisations should be supported to facilitate re-integration.
Building or strengthening indigenous institutional capacity is important in returnee areas, but this can be expensive in terms of time and resources. UNHCR will most likely not assume total responsibility for capacity-building but can nevertheless play a role in generating donor interest. Supporting local organisations enhances their capacity, while laying the groundwork for long-term development. Case Study 7 offers an example of how a local organisation promoting sustainable livelihoods was successfully supported in a returnee area.

Access to land is of fundamental importance in areas of refugee origin.
The government of the country of origin plays a key role in ensuring a supportive policy framework to allocate land and resources to returnees. This is part of the process of building sustainable livelihoods based on the fundamentals of security of residence and tenure.

Interventions facilitating re-integration should be aimed at returnees and the local population in the area of return.
Local residents and returnees should be involved together in the design and implementation of projects in returnee areas. In the case of large-scale voluntary repatriation, the local population and returnees are often equally in need of assistance. Distinctions between local residents and returnees may, however, be artificial. It is inappropriate and may in fact hamper integration efforts to restrict interventions to returnees: assistance projects should be directed to areas of return, rather than to specific sectors of the population.

Environmental interventions with returnees need to focus on the issue of livelihoods. Projects which seek to solve narrowly defined environmental problems may not be successful.
Communal mechanisms exist in most societies for natural resource management. There are usually several, and often complex, reasons why these systems might break down and natural resources become over-exploited. Large-scale return be one such cause. Any intervention that seeks to control environmental degradation or to rehabilitate the environment must first seek to understand the cause of environmental change in the target area. Sustainable livelihoods should be the central issue of concern. If people have the means to support themselves in a sustainable manner then the environment is less likely to be degraded, and traditional community mechanisms for natural resource management are more likely to be revived and respected.

Case Study 7. Supporting local organisations for sustainable re-integration: The Fethul Harawe Co-operative, Ethiopia.

It is important to build up indigenous institutional and economic capacity in returnee areas. Prolonged dependence on external organisations and financial support is neither cost-effective nor sustainable. An example from Ethiopia shows how the right support to local organisations can pay dividends.

The Somali National Regional State, or Region 5, is an extensive arid and semi-arid area in eastern Ethiopia. Pastoralism is the dominant activity of the Region's approximately two million inhabitants. Since 1991, Region 5 has seen the return of over 500,000 former refugees from Somalia who had fled during the Ogaden war. The presence of such a large population has placed considerable pressure on water and grazing resources, as well as on regional infrastructure.

Since 1992, UNHCR has worked with the South East Rangelands Project (SERP) in Region 5, an approach that seeks to ensure the sustainability of return by promoting the re-integration of returnees in their home communities. SERP aims to improve livestock productivity and food security, while ensuring sustainable management of the natural resource base by returnees and other residents. One part of SERP's work has been to support the establishment of local income-generating activities, particularly those that can diversify the economic base.

The Fethul Harawe Co-operative was founded in 1990 by Sheikh Ibrahim Bakal, a returnee from Somalia. The co-operative's initial membership was 70 families, around half of whom were returnees, working together on an irrigated agriculture project. A committee of five elected members, including one woman, was established. A set of written rules were drawn up, with fines identified for contravention. Profits from produce sold were to be divided between the co-operative and its members.

An area of bush land was secured by the co-operative from the local Gadabursi sub-clan and later cleared for planting crops and fruit trees. As the area lacked a reliable water supply and the co-operative members had limited access to tools and seeds, SERP did not offer financial support, but instead provided seeds, tools (such as shovels and picks), rims for shallow wells, technical assistance (including soil tests), and food-for-work for digging wells. Investment capital and labour were provided by the members themselves. External support was therefore short-term and targeted.

Crops grown and marketed include citrus fruits, mango, guava, papaya, melon, tomato, onion, chilli pepper and a variety of green vegetables. The co-operative now has three trucks and there are plans to expand activities, subject to procurement of water pumps and pipes. SERP's support built on the group's existing skills and enthusiasm, without over-burdening its limited managerial capacity or creating a situation of dependency on large cash grants. The number of families in the co-operative is progressively increasing, assuring sustainable livelihoods for more returnees

1.5 Rehabilitation

- ✔ Environmental rehabilitation should aim to benefit local communities: habitat restoration to pre-refugee status may not be the most effective strategy.
- ✔ Natural regeneration may be the most cost-effective form of rehabilitation.

The aim of rehabilitation should not necessarily be to return the land to its original state.
Rehabilitation schemes tend to focus on restoring levels of biomass used by refugees. However, if previously uncultivated land has been opened up by refugees there is a chance that cultivation will continue after the refugees have left, particularly where the supply of land is limited. Reforestation projects and tree plantations, as a form of compensation, might therefore impinge on land used for agriculture. Local consensus should be sought before rehabilitation is carried out.

Rehabilitation measures should help restore an environment's ability to sustainably deliver the ecological functions and values it has for human society.
Rehabilitation should aim to restore the local community's capacity to derive a sustainable livelihood from the natural resource base. Integrated agroforestry practices, for example, are much more likely to contribute to long-term ecological sustainability and livelihood security than plantations. Since trees are planted between and within agricultural fields, they do not consume additional land resources, and can provide a range of useful forest products and environmental services such as soil conservation. Species need to be carefully selected to avoid unnecessary competition with crops, nutrient depletion and excessive water consumption.

The potential use of facilities after the refugees' departure should be taken into account during the early stages of site planning. Efforts should also be made to involve members of the local community in planning the location of facilities to guarantee their continued use after refugees have left.

Photo
E. Umlas.
Mazowe River Bridge Camp, Zimbabwe.

Because they seek to restore the productive capacity of land, environmental rehabilitation strategies should address ecological and human health as a single, integrated unit.
Compensatory afforestation as a form of environmental rehabilitation can be one-sided and overlook important components of a healthy ecosystem. In densely populated and intensively cultivated areas, for example, soil erosion may be a major concern. Agroforestry would therefore be an appropriate rehabilitation measure as it can alleviate soil erosion while maintaining (and enhancing) crop production.

Where refugee-hosting sites are likely to experience minimal population pressure after refugees have left, natural regeneration may be the most cost-effective environmental rehabilitation strategy.
Many former refugee-hosting areas experience healthy and vigorous natural regeneration if they are left untouched after the refugees have left. As a rehabilitation strategy, this is extremely simple and effective if the land has not been too heavily degraded and if it can be protected from livestock and human pressure for at least 3-5 years after the return of refugees. Such regeneration may lead to a different mix of trees and plants from that which previously existed, which may or may not be desirable. Some intervention may be required in order to ensure that the zone does not become dominated by invasive weeds which might preclude successful re-colonisation by native species.

Cross-cutting Themes

SECTION 2

While the previous section was confined to the chronological phases of refugee support, the following lessons relate to a variety of general themes that can be applied to any phase of refugee assistance, from emergencies to durable solutions.

2.1 Financial Considerations

- ✔ The cost-effectiveness of timely environmental support projects needs to be clearly presented to donors and host governments.
- ✔ Donor and agency mandates may mean that funds for environmental activities cannot be channelled through UNHCR.
- ✔ Allocation of project funds should remain flexible to enable project managers to respond to changing situations and address new problems as and when necessary.
- ✔ Funding commitments for more than one year are desirable for most environmental projects.
- ✔ Development-type funding becomes increasingly important when humanitarian activities become long-term settlement operations.

Simple cost-benefit analyses at the outset of a refugee operation can help persuade donors to support environmental activities.
A simple presentation of the relative costs of immediate versus delayed funding of environmental management activities may make it more attractive to donors to provide prompt and early support. This approach should appeal to many donors, who are under increasing pressure to incorporate cost-effectiveness in their programmes.

Applying cost-recovery concepts to refugee environmental operations makes economic and development sense.
Free donations should be minimised, and any project assistance should have a pay-off equal to its cost. This may not be easy to apply, especially where the natural resources are of low financial value, but of high biodiversity or political importance. In such cases, the value of the resources is more difficult to determine. Nevertheless, costs of environmental project interventions should be at least matched by the environmental benefits generated. Resource economists may need to be employed to determine over what time period, and at what rate of return, environmental pay-offs should be expected.

Funds allocated to initial environmental mitigation activities need to be sufficiently flexible to allow for change as problems become more clearly defined.
Initial budgets are often based on a rapid analysis of problems during emergencies; more complete technical analysis often comes later, at which time it may prove necessary to adjust or replace certain activities. In line with UNHCR's current efforts to maintain flexibility in its accounting system, initial financial commitments should be open to change, pending full assessment of the issues and development of more definite project outlines.

UNHCR can play a key role in soliciting funds for environmental activities, but this is not easy to operationalise. Partners with non-relief interests should also be involved.
UNHCR's mandate limits its activities to the support and protection of refugees. Donors with development or environment-related interests might therefore be less interested in channelling funds for environmental activities through UNHCR. Mainstreaming environment into general refugee operations and fundraising programmes is therefore a priority. Likewise, non-relief partners must solicit funds for environmental operations which embody the broader, longer-term perspective of integrated development.

Multi-year funding commitments by donors are most desirable for environmental activities.

Environmental projects tend to have long-term objectives and impacts; to meet expectations and realise the intended outputs, many will require funding for several years. Such projects may entail the progressive establishment and strengthening of community-based management structures or capacity-building in local and government institutions. They may also involve the planting of trees and other vegetation with long growing cycles. As these activities demand funding over a period of years, suitable donors should be sought as early as possible.

Development-type funding becomes increasingly important as humanitarian emergencies become long-term settlement operations.

The transition of a project from emergency to care and maintenance to (perhaps) post-repatriation is greatly facilitated by the early involvement of 'development' funding sources, alongside the initiatives of humanitarian agencies. Given the broad geographic spread of natural resource management activities, the joint involvement of local communities and refugees becomes vital. Development-oriented agencies and their donors are often well-versed in the types of appropriate approaches, such as incorporating more participatory methodologies.

It is important to understand the links between environmental change and the well-being of refugees and local communities.

Photo
UNHCR/A. Hollmann.
Hongo Camp., Bukavu Region, South Kivu

Options for funding post-repatriation environmental rehabilitation need to be considered as early as possible, and all relevant actors brought into the planning process.

Ideally, the involvement of UNHCR and development donors in environmental rehabilitation during the refugees' stay should ensure the sharing of responsibility and a smooth transition to post-repatriation. UNHCR is best positioned to attract funding early on for repatriation, re-integration and rehabilitation, as a single package.

2.2 Inter-Agency Co-ordination and Co-operation

- ✔ Responsibility for environmental co-ordination should be clearly assigned.
- ✔ Responsibility for implementing environmental activities should normally be assigned to a qualified lead agency.
- ✔ Management of environmental activities should be gradually handed over to camp authorities, local institutions and local communities.

As agencies have different mandates and goals, it is vital that project objectives and implementation arrangements are agreed upon prior to entering into collaborative working relationships. UNHCR's goals may differ from those of NGOs, who tend to be concerned primarily with sustainable development and capacity-building in response to specific problems identified by local communities. When NGOs are co-opted as implementing partners in a refugee situation, it is important that their respective skills, roles and responsibilities are understood from the outset, and that external interference in their own sectors of expertise is minimised. Case Study 8 illustrates how the roles of co-ordination and implementation can be successfully assigned.

Responsibility for co-ordinating environmental activities should be clearly assigned.
There is a need for clear policy direction and co-ordination on environmental issues within the refugee context. The role of co-ordinator can be jointly assumed by the host government, UNHCR and, where appropriate, an agency with a development/environment mandate. Given that no clear regulations may exist governing the refugee population's use of natural resources, special guidelines should be developed in line with national environmental policies and the legal framework.

The role of an environmental co-ordinator is as much managerial as technical.
The role of the environmental co-ordinator is to oversee implementing partners, provide guidance on policy direction, and ensure harmonious working relationships and non-contradictory implementation strategies. While familiarity with environmental issues is useful, the ability to resolve conflicts, communicate ideas and develop mutually-agreeable operating guidelines tends to be equally important. This is especially so when integration is needed with other aspects of the refugee operation.

Where funds for environmental activities are not channelled through UNHCR, co-ordination, monitoring and evaluation is critical; the host government may have a strong role to play in this. Whether or not funds for environmental projects are channelled through UNHCR, proper co-ordination, technical evaluation, assessment of cost-effectiveness, and general appraisal of each agency's impacts is critical. In principle, the host government undertakes external 'policing' and may assume a leading role in controlling NGO activity. However, governments often lack the technical expertise or operating resources to monitor environmental activities. UNHCR should therefore provide the necessary support to the hosting government to carry out monitoring and evaluation of environmental activities.

Conflicts of interest may arise if one agency seeks to co-ordinate and manage/implement projects. Separating co-ordination from implementation acknowledges not only the difference in expertise required, but also the potential conflicts of interest that could arise if one agency has an all-encompassing mandate. A two-tiered system offers greater objectivity, accountability and opportunity for modification of project initiatives (see Case Study 8).

Responsibility for implementing environmental activities should normally be assigned to a qualified lead agency.

Clear environmental, social and political benefits can be achieved by appointing a lead agency to implement (though not normally co-ordinate) environmental initiatives across several refugee settlements and camps. Relations with host communities and the government can be significantly improved and a real impact felt in reducing the rate of environmental degradation. The relationship between NGOs and UNHCR is also likely to be more harmonious if one organisation or unit has a clear mandate to handle environmental issues and provide advice. Likewise, inter-agency rivalry and duplication are eased due to reduced competition for the same funds for similar activities. When a lead agency is not available, on-site environmental expertise should be provided to support camp management and community services agencies.

Development-oriented partners are best suited for implementing environmental activities, at least in the longer-term.

Establishing natural resource management systems is a long-term activity that calls for the involvement of local communities and a range of other stakeholders. As such, an environmental implementing agency should normally be development-oriented rather than relief-oriented once the emergency period is over. An agency with experience in both relief and development is ideal.

Photo
UNHCR/J. Courtin.

Access to productive land can encourage refugees to adopt more environmentally sound practices.

A lead environmental agency can progressively hand over a number of activities to camp management or community services agencies.

A lead environment agency may have technical expertise in a range of sectors which, over time, can be used to strengthen the capacities of other agencies. Agencies assigned to camp management and community services would likely assume responsibility for the administration of particular environmental activities (within refugee settlements such as stove promotion or tree planting), depending on their willingness, interest and the earlier earmarking of funds.

Photo
UNHCR/L. Taylor.
Gomoa Bududuram Camp

It may sometimes be appropriate to identify a technical support agency, as an intermediary between the co-ordinating and implementing levels.

A third agency may be sought for technical advice, help and support to the implementing partners. In order to maintain credibility as facilitator (and avoid competition with other agencies) the technical support organisation may be forced to limit its own implementation role. This implies a possible three-way division of responsibilities, between actual implementation at field level, overall co-ordination and, under some circumstances, the intermediate provision of technical support at regional level.

A technical support agency can provide training and capacity-building services, which are valuable in promoting co-operation between agencies, especially local NGOs and under-resourced government departments.
An intermediate agency, normally an NGO, can act as a resource for other NGOs and for under-equipped government departments by providing a variety of support services, such as technical training or institutional capacity-building.

If refugee- and community-oriented environmental programmes are to be run concurrently, there is a risk of a clash in approach between relief and development philosophies.
Support to community-based environmental activities requires a developmental approach that may contrast with the emergency, relief-type interventions more typical of refugee operations. A development approach should focus more on process than outputs. Existing implementing partners accustomed to relief work may find it difficult to adapt themselves to competent development interventions. A decision must be reached on how the refugee and local programmes are to be internally structured and operated.

Case Study 8. Environmental co-ordination and implementation: Separate but equal roles in Malawi.

Malawi, a country of only 10 million people, hosted around one million Mozambican refugees between 1987 and 1995. The country was already experiencing inter-related problems of increasingly small land holdings, declining soil fertility, lack of food security and overall poverty. Severe over-exploitation of natural resources was exacerbated by the refugee influx, particularly with the harvesting of firewood and construction materials.

Poor inter-agency co-ordination on environmental issues was first highlighted in 1992. The expansion and diversification of NGO activity posed certain risks, and there were several examples of project duplication. Further studies highlighted a lack of inter-agency collaboration and weak institutional linkages with other sectors. Building on a problem analysis, the 'Co-ordination Unit for the Rehabilitation of the (Refugee-Impacted) Environment' (CURE) was established in 1994 as a unit within the Wildlife Society of Malawi.

The CURE secretariat co-ordinated inter-agency meetings and provided technical assistance to NGOs and government agencies through publications, training and personal contacts. CURE also acted as a facilitator, providing its NGO and community-based organisation clients with training and capacity-building services, for example in participatory approaches to project formulation, management and evaluation, and gender-sensitive approaches to community development and empowerment.

CURE adopted the role of facilitator, aiming to encourage best practices, discourage duplication and promote appropriate projects to fill gaps. This approach appears to have worked in part because of the relatively small number of NGOs working on environmental issues in Malawi, and hence the absence of competition. The participation of government agencies in CURE was also important. However, in order to maintain its respect as a facilitator, CURE carefully limited its implementation and management role.

Separation of the role of co-ordination from that of implementation acknowledges not only the difference in expertise required, but also the potential conflicts of interest that can arise if one agency has an all-encompassing mandate. The two-tiered system offers objectivity, accountability and opportunity for modification of project initiatives.

Environmental co-ordination should be progressively handed over to permanent institutions.
In many cases, environmental forums set up during a refugee influx have an initial orientation towards emergency issues. If these forums are to continue guiding the direction and scope of environmental activities through and beyond the care and maintenance phase, they must develop into more sustainable, long-term bodies, and become integrated with existing government and local structures. UNHCR should gradually hand the chairmanship of any forums over to government, perhaps in conjunction with development-oriented organisations. If arrangements for such permanent co-ordination are agreed on, mechanisms are already in place to identify, design and implement longer-term environmental projects once refugees repatriate or re-locate.

There is great value in proper dissemination of lessons learned across current and past refugee situations, to build on successful strategies and avoid repetition of mistakes.
Several refugee emergencies have occurred in countries that border each other. Environmental lessons are being learned in all of these situations, and there is great value in exchange visits to observe different strategies and their impact, alongside the sharing of evaluations, appraisals and other reports.

Regional environmental focal points can facilitate interchange of experiences and ideas.
Individuals within particular refugee programmes may initiate exchange visits or information sharing with organisations working in nearby refugee operations. The process is likely to be facilitated, however, by regional focal points with the mandate to promote such interchange.

2.3 Policy Issues

- ✔ Government policies often determine the extent and success of refugee participation in environmental management activities.
- ✔ Laws related to refugees' use of land or specific natural resources should be clearly communicated to refugee and local communities concerned.
- ✔ Important gains may be made by lobbying and advocating for policy change through local and national government.
- ✔ Where appropriate, consideration should be given to the presence of refugees in programmes developed under national Environmental Action Plans.

Government policy is often the key to success of refugee participation in natural resource management.
While the goal of local and refugee participation in environmental management strategies is a sound principle, its viability rests on the host government's willingness to allow refugees to have access to local natural resources. Such policies must be clarified from the earliest opportunity. This may imply approval of access for wood products, rights to cultivate, or permission to engage in economic activities. Where the environmental policy is well-defined, opportunities for refugee participation, decision-making and access to (with assumed control over) natural resources becomes clear, even if they turn out to be limited. If the policy is vague, however, or local policy contradicts national policy, the likelihood of achieving effective refugee participation is greatly diminished.

An ambiguous government policy or inconsistent application of laws relating to refugees' rights over land or resources may encourage or contribute to environmental degradation.
While a total ban may protect the local environment, if properly enforced, such bans are rarely workable without concerted local support. Under partial enforcement, local resource utilisation will generally continue. When refugees are denied official access to local land but are not physically barred from using this resource, negligent and unsustainable exploitation occurs (see Case Study 9). Host governments must therefore develop a clear policy statement on refugee access and usage rights, and then follow this through with whatever enforcement measures may be required. Otherwise, it is preferable to avoid such policies altogether.

Monitoring and seeking to influence policies affecting the environment in a refugee situation may be more cost-effective for an environmental agency than direct implementation of field activities.
The greatest impacts on the environment in refugee situations may be caused by policy decisions relating to, amongst other things, camp siting, layout and size. If agencies can influence such decisions at the policy level, through a combination of local, national and international lobbying and advocacy, achievements can be far more significant than if they are confined to implementation of remedial programmes.

National environmental policies are unlikely to refer to refugee-affected areas, but can be supplemented with basic guidelines to create a supportive policy framework.
Most countries have National Environmental Actions Plans or similar strategies for environmental management. As few refer specifically to resource use planning in refugee-affected areas, efforts should be made to influence their content with reference to refugee influxes, drawing

particular attention to the issue of site selection. This can be done through the relevant ministries or agencies responsible for the formulation of sectoral plans.

Case Study 9. The importance of defining and adhering to a refugee land access policy: Cultivation by refugees in Tanzania.

Attempts to promote sustainable resource management are far more likely to succeed where people who use land have some form of security of tenure or usufruct. This applies as much to refugees as to any rural community. Where access and usage rights to land outside refugee settlements are supported by the host government, refugees have a greater stake in its management. Where access is banned or restricted, as is often the case for political or other reasons, refugees are more likely to undertake unsustainable practices – but this can be minimised with effective enforcement. The least desirable option is for refugee access to be banned by national decree and then tolerated at the local level. Under these conditions, as witnessed in Ngara, Tanzania, refugees exploit natural resources, showing no long-term interest in conservation.

From 1994 to 1996, Ngara District hosted some 415,000 refugees from Rwanda and Burundi. Of these, 375,000 were housed in four camps within 7km of each other, creating a major imbalance between the population and the local natural resource base. The Tanzanian government (at the central level) imposed an official ban on refugee cultivation. This was later upgraded to an absolute ban on refugee movement outside a 4km radius from the camps. Neither of these bans were enforced at the District level, although it was made verbally clear to the refugees that cultivation was not, officially, acceptable.

Local people benefited from the use of cheap skilled refugee labour to produce food and cash crops and did little to support the cultivation ban. By mid-1996, the refugees had opened up 15,000ha of new farming land in the district. Ngara became a substantial exporter of refugee-grown vegetables and other produce. The ban was not enforced and was in fact opposed at the local and district level.

Refugees soon entered into short-term leasing arrangements with local people, under which they had rights to cultivate single season crops such as maize, okra, tomatoes and eggplant. Despite their considerable farming expertise, they used insufficient fertiliser, constructed no terraces or bunds on slopes, planted few perennial or slow-growing crops such as bananas (their customary staple) and generally pursued unsustainable and short-sighted measures to extract the maximum possible yield from the land in a short space of time. Over one million tree seedlings were distributed in 1996, along with 900,000 *Sesbania sesban* seeds and 200kg of *Cajanus cajan* for direct sowing on cultivated plots, but survival rates were negligible outside the camp boundaries.

It became clear in Ngara that the inconsistent application of government policy relating to the refugees' rights over local land resulted in more environmental damage than would have been the case if a clear policy had been enforced, even if that stance had allowed full access and exploitation.

2.4 Support to Local Institutions/Government

- ✔ Local government agencies and local institutions should be included in environmental management and implementation to the extent possible.
- ✔ Institutional capacity-building is a common prerequisite for effective participation of local government and/or institutions in environmental management.
- ✔ Creation of new local institutions may be more sustainable than operating projects with external organisations.
- ✔ Use of local people as extension agents can promote trust between the community and implementing/managing organisations.

Conflicts over natural resources can be addressed if assistance is offered that meets local priorities.
When refugee hosting communities and governments contribute goods and services (including fuelwood) to support the refugee population, they may seek payment in return. Responding to such requests by initiating projects with the straightforward aim of replacing the damaged resources is not always appropriate. In-kind support or investment in local infrastructure, according to locally identified needs, might be suitable and accepted compensation.

Building capacity and providing support to local government is a prerequisite for effective participation in damage mitigation activities, and need not be costly.
Government departments in developing countries, including those responsible for natural resource management, are typically ill-prepared and under-resourced to handle the demands of a refugee influx and would thus benefit from UNHCR support. This need not be costly and can be provided locally in the form of transport, field allowances, training or field and office equipment. A basic needs assessment to determine the required skills and training can ensure meaningful capacity-building initiatives.

Assuring full government participation in environmental initiatives fosters good relations.
When UNHCR and its partners establish links with relevant government technical departments, the approach becomes more participatory and transparent, improving relations at all levels.

Where possible, and according to capacity, local organisations should be identified to implement environmental activities.
Identifying and supporting local natural resource management institutions is essential for sustainable environmental management. The challenge is to work within existing structures, creating new structures only when existing facilities are incapable of addressing environmental concerns.

Support for local NGOs must include appropriate capacity-building measures.
Local NGOs in a refugee situation are likely to gain access to more financial support than they have the capacity to manage. Care is needed to ensure that capacity is developed slowly and steadily as this can be a long-term benefit to the region and increase the sustainability of environmental initiatives.

Where environmental management strategies seek to involve entire communities, appropriate management institutions need to be identified and their capacities strengthened.
Prior to the full implementation of environmental initiatives, local institutions (e.g. village natural resource committees) may need to be gradually strengthened so as to better ensure the long-

term sustainability of activities. Capacity-building exercises can include training in financial management, project planning, technical aspects of plantation management and the use of local level by-laws for protection. Capacity-building should be undertaken as early as possible in the care and maintenance phase so that total management responsibility can be assumed by the local institution prior to or upon repatriation.

Local level resource management institutions are not always visible, and need to be carefully identified.
Several different institutions are typically responsible for resource management at the village level. These may include politically elected bodies, traditional leaders' councils, formal and informal groups such as savings societies and youth groups, or even individual households. It is important that time is taken to identify, village by village, the most legitimate and viable institution.

A lack of democratic principles within a local institution does not automatically preclude it from being the legitimate resource management institution for that community.
Traditional village institutions are not necessarily democratic. However, they can be highly effective as resource management institutions because of their legitimacy within the cultural context of a rural community. Care should be taken with any attempt to 'democratise' such an institution, as this risks undermining its authority, and thus capacity, rather than enhancing it.

Supporting and strengthening local institutions sometimes requires little more than recognition of their legitimacy as resource management institutions.
Government or agency extension staff visits to traditional village resource management institutions can spark a chain reaction of positive events. Acknowledging these visits as official recognition of the legitimate role that traditional institutions can play in resource management, host communities may accord greater legitimacy to the decisions these institutions make. Consequently, village institutions might gain more authority and become more effective.

Creating new local institutions may be more sustainable than bringing in external organisations to manage projects.
When an effective local level management institution is not available, it may be more sustainable to create new local institutions along democratic lines. Although an international organisation can assume this role, new institutions can help ensure project success as well as a sense of ownership by project participants.

The adverse environmental impacts of hosting refugees often run far deeper than visible degradation, and can affect local institutions.
Although the visible environmental degradation in local communities during a refugee influx and after repatriation may be serious, the lack of capacity of local institutions to manage their natural resources may emerge as the long-term threat. Implementation strategies that fail to recognise this will not contribute to sustainable environmental management of these areas. Environmental programmes in refugee-affected areas should thus seek to understand and address the effects on local institutions alongside the visible degradation of resources and infrastructure.

Environmental concerns relate to a number of sectors, such as water and sanitation, food supply and community services.

PHOTO
UNHCR/H.J. Davies.
Dumdumia Camp, Bangladesh

The use of village extension agents, chosen by the villagers and working in their own villages, can promote trust within a community.

Mutual trust between a community and the facilitating agency is one of the most important ingredients for any successful community-based natural resource management programme. In some cases, using village-based extension agents proves to be a quick way of establishing this trust.

A local participatory approach places extra emphasis on the need for co-ordination at the level of local administration.

As many development activities focus on participatory approaches, local co-ordination of agency activities should occur as some villages may suffer from a flood of teams carrying out participatory rural appraisals (PRAs), and be overburdened by management committees.

2.5 Local Participation

- ✔ Given assistance and direction, local communities are effective managers of natural resources.
- ✔ Local participation in projects is best assured if environmental strategies are presented as being a development programme.
- ✔ Formation of joint refugee/local management committees can prove an effective mechanism for conflict resolution and enforcement.
- ✔ Trained facilitators are required to implement and guide local participatory projects.
- ✔ Participatory planning and project implementation should be transparent and should not raise expectations unduly.
- ✔ Local communities should be empowered to undertake monitoring and evaluation themselves.

Local participation means local people take the lead role in planning and implementing environmental rehabilitation strategies within their own communities.
Experience has consistently shown that sustainable environmental management practices are best achieved with the full and meaningful participation of the affected communities. Mitigation of damage and rehabilitation in refugee impacted areas requires considerable input from the impacted communities. Insufficient local participation in planning makes any subsequent hand-over process complex and time consuming. It is therefore critical to conduct participatory problem identification and needs assessment of the target area before launching any environment-related programme.

Enabling participation and empowerment requires commitment and patience from donors and implementing partners.
Empowerment is an ongoing process requiring commitment to decentralised, community-based decision-making. Such a commitment can be hard to sustain when, for example, funding cycles require swift action or communities appear to be making wrong decisions. Nevertheless, without it, the sustainability of any environmental rehabilitation initiatives is likely to be compromised.

Communities, once well organised, and with incentives, can effectively implement management of natural resources.
The active local-level involvement of donors and external advisors, together with assured support from government institutions, creates conditions for local communities to gain sufficient confidence and expertise to implement natural resource management activities in many refugee-affected areas.

The ability of local people, suitably empowered, to control refugee behaviour should not be under-estimated.
The ability of local people to influence the way refugees treat the host environment should not be downplayed. Local people can exert a surprising degree of control over access to resources. If suitable, local natural resource management practices can be identified and collaborative efforts made to have refugees comply with these under agreements with the local population. It is likely that the host government will be supportive of such initiatives.

Local participation is better assured if environmental strategies are presented as being development programmes for the local communities.
Since environmental problems arising from refugee-hosting are usually attributed to the refugees themselves, local communities may not always see the reason for their participation.

However, if environmental rehabilitation is to be sustainable in the long-term, such participation is imperative from an early stage. It can be easier to facilitate the involvement and empowerment of local communities if strategies take the form of integrated on-farm agroforestry and soil conservation projects, for example, with the obvious goal being the long-term development of targeted communities.

The formation of joint refugee/local management committees can be an effective mechanism for conflict resolution and enforcement.
It is important to use existing local organisations and structures to develop and manage environmental activities in a participatory manner. However, a refugee influx brings new challenges in resource management that cannot always be met by existing community-based institutions. Establishment of joint management committees, ideally combining traditional and modern refugee and local community authorities, provides valuable forums for co-operation. Through these, both parties can resolve a range of conflicts that arise, develop and enforce by-laws relating to natural resource harvesting, and use that aid in spreading, and thus reducing, the refugee impact on the environment. Forming such joint committees would normally be the responsibility of the lead environmental agency, in conjunction with local authorities.

Participation takes time.
Participation by rural communities is time consuming and represents a major investment on their part. To be effective, participation must be built on a relationship of mutual trust and understanding between communities and those agencies facilitating their development. In the early stages of a programme, it is therefore important to proceed in a slow and transparent manner, and to devote resources to building trust. Regular interaction between development agents and community members, in which development agents make it clear that they are not able to provide anything for free, is the best way of achieving this.

Limiting the role of outsiders to that of facilitator can considerably enhance the long-term viability of projects.
Government and non-governmental agencies involved in the promotion of participatory approaches must act in an enabling manner, without dominating the decision-making process which should be handled by the community itself. Communities must take responsibility for planning, implementing, monitoring and evaluating environmental management activities. This may lead to delays in project outputs and long periods of implementation with little to show, but will better ensure that the communities involved will be able to manage their resources sustainably once donors have withdrawn.

Participatory approaches, including PRA, allow identification of roles, responsibilities, weaknesses and strengths in a community becoming involved in natural resource management.
Participatory approaches allow refugee and local populations to identify problems and possible solutions, with limited input from external facilitators. Communities can be helped to identify the respective roles and responsibilities of different sub-groups as they relate to natural resource utilisation, along with weaknesses and strengths that may exist. This can develop into a process of planning and implementation of community-based management strategies.

The use and application of participatory approaches requires properly trained facilitators.
The use of local institutions and people already trained in participatory methodologies is crucial. Poorly trained facilitators are prone to over-manage discussions and bias community problem-identification, undermining the principles of bottom-up decision-making.

Participatory planning should not raise community expectations unduly.
There is a danger that, in initiating a process of participatory planning, an agency can promote the view in the target community that identified problems can be solved with external support. This is not necessarily the case. Transparency is required from the outset to make it clear what the project may be able to offer, in order to avoid unrealistic raising of expectations and subsequent disappointment.

Woman using an energy-efficient stove and practices (stacked pots and lids). Burundian refugee drawing used in non-formal education programmes in Ngara, Tanzania.

In seeking local input in planning, some consideration should be given to global concerns over issues such as biodiversity, which may be of limited immediate importance to host communities and refugees.
Local participation and decision-making is clearly valuable in project planning and implementation. However, there may be national or global environmental issues at stake, of which local communities have little knowledge and about which they have limited concern. An example might be an endangered plant or animal species, but one that brings no economic benefits to local people. If local people are expected to protect resources of global value rather than immediate local benefit, it may be appropriate to consider providing them with additional financial or other support with which to do so. They cannot, and should not, be expected to bear any such costs alone.

Cost-benefit analyses limited to financial repercussions may not capture the degree to which empowerment of a community has contributed to the sustainability of its environmental management practices.
Large amounts of donor funds spent on establishing participatory management systems may produce relatively little direct financial revenue for communities. However, the empowerment promoted at the local level is ultimately of far greater importance to sustainable environmental management than the money yielded (although the two are certainly linked), and it would be a mistake not to support such initiatives on the basis of low financial rates of return.

The best way to monitor environmental rehabilitation activities on the ground is to empower local communities to undertake participatory monitoring and evaluation exercises themselves.
Community-based monitoring and evaluation may demand that local people are provided with project monitoring and evaluation skills. Training in resource evaluation, management and the development and identification of suitable indicators through which success or failures may be tracked are essential tools in this respect. Combined, these mechanisms enable project monitoring and evaluation without external assistance.

Photo
UNHCR/ A. Hollmann.
Goldhap camp, Jhapa District, Nepal.

Local procurement of goods for environmental projects can be both cost-effective and more sustainable.

Environmental projects demand a variety of inputs, some of which can easily be procured or made in the vicinity of refugee settlements. Examples include tree seeds, live fencing for areas set aside for regeneration, ceramic stoves or signs. Although donor funding may make it possible to continue using high quality materials imported to the refugee-hosting areas, if efforts can be made to identify local sources then sustainability will be greatly enhanced and money may be saved. Local people and refugees will also gain greater economic benefit from such local procurement. It should be borne in mind, however, that some goods are best procured externally throughout the life of a refugee operation, for the sake of the local environment. Such goods include prefabricated shelters, without which the local extraction of construction materials might prove highly damaging.

Environmental concepts can be integrated into existing school curricula or adult education programmes.

Photo
UNHCR/ A. Hollmann.
Shamark Camp, Pul-I-Khumri, Baghlan Province, Afghanistan.

2.6 Gender

- ✔ Gender issues should be integrated at the project design and implementation phases.
- ✔ Incorporating gender issues into projects means more than involving women.
- ✔ Targeting women alone can increase their workload and undermine the purpose of gender initiatives.
- ✔ Participatory approaches can be useful in identifying gender roles.
- ✔ Conflicts may arise in some communities between gender sensitive approaches and attempts to build on traditional and customary practices.

Gender-related issues and concerns should be integrated at the project design and implementation phases. Staff should have the skills to deal with gender issues appropriately.
Incorporating gender considerations into projects can be challenging. It will normally require the recruitment, probably full-time, of specialist staff to carry out gender analysis and monitoring. Care should be taken to avoid making gender a stand alone issue. All staff should receive training on how to use gender analysis in their work.

Incorporating gender considerations into projects means more than involving women.
Understanding gender relations and their relevance for resource management practices is a prerequisite for any environmental intervention. All members of society have their own roles that must be understood if they are to be successfully involved in any environmental activities. In a refugee situation these roles may well differ from those in traditional society, due to the upheaval brought about by migration. Men, as much as women, may find their customary roles altered. This may complicate the picture. The main linkages between women and the environment tend to concern domestic energy and food. Among other linkages, such as access to land and other resources, livestock, water, shelter and site planning, the role of men may prove more important to consider.

Participatory approaches can be particularly useful in identifying gender roles.
Any needs assessment with refugee or local communities should be sensitive to gender. Participatory approaches, properly used, provide useful tools and methodologies to learn what gender implies for a particular community in terms of differences in roles, responsibilities, power structures, control and access to resources.

Simply targeting women may increase their workload and undermine the real purpose of gender initiatives.
In attempts to involve women more in environment projects, there can be a tendency to increase their workload without actually altering their level of involvement in decision-making – by employing them, for example, as tree nursery workers. There is a need for proactive and participatory attempts to give women a meaningful role in project planning and implementation.

Women's involvement in projects should go beyond ensuring that they are beneficiaries, and should secure their control over what they produce.
Environment projects often take explicit measures to include women as beneficiaries. However, a full understanding is first needed of the different roles played by men, women and children in the sector concerned. For example, if the project relates to agriculture, it is likely that men control the production of some crops, and women others.

Exclusion of men may be at the expense of the environment.
While women are normally responsible for domestic activities, and are thus the natural focus for compound forestry and household energy programmes, there is also a clear need to attract the interest of men in environmental programmes. Men play a major role in the exploitation of natural resources, particularly for commercial purposes such as woodfuel harvesting, grazing and extraction of various tree products.

Proactive measures may be needed to involve men, perhaps including explicit incentives.
The involvement of men in environmental initiatives can be promoted by providing benefits which suit the particular roles they play in the refugee setting. This may be through promoting the planting of trees which provide fodder and other marketable products, or by offering incentives which they will find attractive, such as tools, building poles or tradable commodities.

In some societies, conflicts may arise between gender sensitive approaches and attempts to build on tradition and customary practices.
To promote sustainability and community participation in projects, it is advisable to build on traditional societal structures. At the same time, however, such customary structures may be discriminatory on the basis of, for example, status, gender or age. Efforts to promote gender-sensitive approaches may confront resistance within such traditional structures. Decisions must then be made whether to work within these systems, arguably reinforcing them, or attempt to modify them. In a relief situation the former is generally the most pragmatic option. However, the issue becomes more difficult in long-term settlement or returnee operations, where empowerment may be undermined by discriminatory barriers within society. A balance must be struck between gender and cultural sensitivities.

Technical Themes

SECTION 3

Lessons in this section are derived
from a number of specific technical fields.
They are likely to be relevant
under particular local conditions and,
as such, are more appropriately considered apart
from the cross-cutting lessons
in the previous section.

3.1 Forestry and Natural Resource Management

- ✔ It is rarely viable to replace natural woodlands or forests by new planting schemes.
- ✔ Area closures are cost-effective and environmentally appropriate.
- ✔ Refugee and local community participation is essential in all forestry related activities.
- ✔ The use of indigenous and/or several species of trees should be encouraged.
- ✔ Awareness raising is an important component of all forest-related activities.

3.1.1 Tree Planting – Options and Recommendations

Appropriate forms of seedling production should be ensured for each situation.
Seedlings can be produced in a number of ways. Large, high profile, centralised tree nurseries using hired labour are often unsustainable, fail to incite ownership of, or responsibility for, seedlings, and generally lead to poor survival rates following planting. Sub-contracted production (such as through local NGOs) is more suitable as this can give equally high outputs while also providing opportunities for local entrepreneurs. However, the groups involved must have sufficient capacity to handle the demands of production, financial accountability and reporting that the activity is likely to demand – particularly at the early stages of an operation when expectations are high.

Production of seedlings should be decentralised to local community groups and refugees as early as possible.
Decentralisation of seedling production should be encouraged among individuals and small community-based organisations within the refugee and local community at the earliest moment. This can help achieve a satisfactory balance between meeting output targets cost-effectively and promoting better survival rates by adding value to raising and protecting trees. Furthermore, promotion of small-scale, private tree nurseries under refugees and local management, leads to the development of skills that can de-mystify the process of growing trees.

Tree planting activities should, in the first instance, be concentrated within camp boundaries.
Tree planting around refugee homesteads has often proven the most successful of all reforestation initiatives, because of the clearly defined rights of ownership and access to the benefits derived from the trees. In anticipation of such benefits, refugees take greater care of seedlings resulting in higher survival rates. Tree planting should be supported within settlements, but it should not be the only focus due to the risk of tree felling at repatriation. Fast-growing multi-purpose species and fruit trees are often popular choices for planting around homesteads.

People should not be paid to plant trees if this undermines the sense of ownership and sustainability.
Forestry activities need not, and should not, be confined to nurseries, plantation establishment and fencing using salaried labour. Such activities are limited to the period for which funds are available and tend to lead to low plant survival rates, uncertainty about harvesting rights and lack of interest in voluntary participation in environmental activities. More sustainable and effective reforestation opportunities focus on managing natural regeneration, promoting sustainable tree cutting practices, and encouraging the planting and joint management of a variety of multi-purpose trees and crops within and adjacent to the camps. Refugees and local people should be involved in prioritising interventions and managing such activities.

3.1.2 Long-term Planning

Upon repatriation, refugees should be encouraged to leave any trees they might have planted.
Refugees have been known to cut down trees they have planted when the time comes for repatriation. This is often driven by the feeling that others should not benefit from the fruits of their labour. Several approaches should be tried to overcome this. One is to focus tree planting activities within local communities or forest reserves, rather than only in the refugee settlements. Another, and more difficult, is to conduct awareness raising exercises with refugees on the importance of leaving these trees as a gift to their host communities. Provision of financial or other incentives to leave trees standing at the time of repatriation is also an option.

3.1.3 Wise Management

The environment should not be accorded a higher value than human subsistence.
In the short-term, there are obvious trade-offs between the well-being of resource users and that of the local environment. For example, land set aside for regeneration may constitute a loss to local livestock owners. Similarly, the imposition of restrictions on access to wood or other resources may affect refugee well-being by reducing the number of meals a family can cook, or adding to the labour burden of firewood collection. A socially acceptable balance has to be struck between environmental protection and refugee welfare.

Environmental management must account for the links between environmental stability and refugee welfare.
Many people are unaware of the connections between the state of the environment and the security and welfare of refugees. Nonetheless, the links should not be overlooked or underestimated. The maintenance of natural resources, under some form of sustainable community management, can result in improved refugee-host relations, a better balance between resource supply and consumption, and improved livelihoods.

The most cost-effective way to address deforestation outside refugee settlements, and on land not under private ownership, is to promote regeneration and managed harvesting – rather than new planting.
If site planning decisions have led to a situation where deforestation appears inevitable, the most viable and cost-effective means by which to achieve some balance between the rate of cutting and the rate of biomass production is to manage the way in which refugees harvest wood products. This is likely to make a much more significant contribution than tree planting, even on a massive scale, except within camp boundaries. Thus the environmental priority should not be on raising and planting seedlings, although this has its place, but on management and enforcement strategies. These include harvesting rules, zoning different areas on a rotational basis, and the strategic designation of 'no cutting (or entry) zones' to be used as genetic banks for eventual regeneration. It may also include tree marking, signboards, public awareness raising and the use of forest guards. Local communities must be involved throughout in planning and implementing such strategies.

3.1.4 Natural Regeneration vs Replanting

Area closures are effective for regeneration of depleted natural resources.
Natural vegetation can recover fairly quickly under a proper system of management and protection: area closures are therefore cost-effective tools to promote natural regeneration (Case Study 10). Area closures require no major investments apart from wages for guards and

fencing materials, if used. In cases of severe degradation, closures may need to be supplemented with enrichment planting to initiate re-growth.

Case Study 10. Area closures for natural regeneration, Tigray, Ethiopia

Land is a scarce commodity in Tigray, northern Ethiopia. Since 1991, several hundred thousand refugees have returned from Sudan. Population pressure has intensified, compounding problems of over-cultivation, overgrazing and unsustainable exploitation of vegetation for fuel, fodder and building materials. Mountainous areas are most severely affected, with over-exploitation often leading to soil erosion on steep slopes.

Regional government surveys in 1993 recommended that priority be given to rehabilitating degraded areas to return them to productive use. This was to be done through collaboration between the Regional Agricultural Bureau, local communities and the Relief Society of Tigray (REST). Through negotiation with local community members, a total of 45,000ha has been designated for protection. Human interference is limited in those areas to allow natural vegetation to regenerate. Two control options are practised: either access is forbidden, or livestock grazing and grass cutting are permitted. Most of the 'closed' areas are not actually fenced, but their boundaries are known and agreed by local communities.

Community members have shown strong compliance with restrictions on access to closed areas. Trespass, grazing or extraction of wood products are considered punishable acts. Anyone who commits such an act or fails to report offenders is often viewed as a saboteur of a national cause. They are not only subject to stigma, but can also be charged through the legal system.

In situations where land is particularly degraded, enrichment planting of trees is carried out to encourage re-growth. REST operates over 150 central and community nurseries with an annual production capacity of 12 million seedlings: 25 per cent of these are used in the rehabilitation of closed communal lands to complement natural regeneration.

The primary cost for area closures are wages for guards (paid by REST through a food-for-work scheme) and, sometimes, fencing materials. Closures can deprive livestock herders of pasture, or local people of forest products. The use of natural resources for short-term economic gain is not sustainable. Consultation with the affected communities has contributed to the success of these efforts and an understanding of their limitations.

Reasons for area closures must be explained to, and have the support of, local communities.
The decision to close certain areas may deprive livestock herders of grazing lands, or people of plants or tree products in particular. Area closures must be arranged through close consultation with, and support of, affected communities; acceptance of this concept is vital for success.

3.1.5 Maintaining Forest Stability – Respect for Regulations

Tree marking should focus on those trees with the greatest potential for stimulating natural regeneration, not necessarily the largest trees.
Tree marking is intended to preserve a reservoir of trees from which the natural vegetation cover may regenerate following the closure of a refugee camp. Selection should concentrate on trees that have the greatest potential for rapid growth and seed production. A variety of representative species should be selected, with assistance being sought from experts to ensure that a suitable balance of male and female trees are protected.

Forest guards are an essential component of a natural resource protection strategy, alongside tree marking and zoning.
The most viable strategy in protecting forest resources under pressure from refugees is not to prohibit cutting, but to manage, direct and control cutting in order to spread its effects as thinly as possible. This provides the greatest opportunity for regeneration. The first stage in this process is an evaluation of the status of existing resources, and the identification of different zones for different management regimes. This is followed by tree selection and marking. Forest guards, ideally drawn from refugee and local communities, become the crucial intermediaries between the policy and the actual harvesting.

The role of forest guards should not be confused with that of extension workers.
Forest guards are employed to enforce rules on natural resource management. Their effectiveness comes from their ability to resort to legal enforcement, through co-operation with government authorities. It may not be possible for the same people to take on advisory, support or information-sharing roles. Separate staff structures should normally be established for this purpose.

Awareness raising can be carried out in a number of ways such as theatre groups, religious services, recreational activities, sign boards, or within other ongoing programmes.

Photo
UNHCR/ A. Batong.
Kakuma Camp, Kenya.

Signs and posters communicating rules, regulations and sound environmental practices must be supported by, and linked with, other activities.
Public awareness of the regulations governing the way in which refugees are permitted to harvest natural resources can be communicated through a number of channels. Signboards, for example, can be posted at a variety of locations in the camps and surrounding areas. They should be designed by the refugees wherever possible, should be multilingual and must convey the intended message in an appropriate and unambiguous manner.

3.1.6 Moves Towards Sustainability

Sustainable forestry practices take many forms, and include managing for natural regeneration, integrating trees into arable and grazing lands, homestead planting and plantations.
Appropriate forestry practices can be promoted only with a clear understanding of the cultural, social, economic, institutional and environmental objectives towards which they work. In the refugee context, in view of the relatively resource-poor nature of most refugees and their host communities, it is important that these practices yield the quickest results for the lowest investment.

The type of food aid provided to refugees can affect household demands for energy. Efforts should be made to assess cooking traditions and coping strategies among refugees.

Photo:
UNHCR/ S. Errington.
Pishin District, Baluchistan, Pakistan.

Tree species for reforestation must be selected according to the needs of the end users.
For reforestation programmes to be sustainable and meet the needs of intended beneficiaries, the most appropriate species for planting must be identified with input for the local community. Multi-purpose tree species, suitable for the local environment, should be given priority. In cases of land shortage, tree species that can be integrated within agricultural systems should be favoured.

When land cannot be found for plantations near refugee settlements, reforestation should aim to integrate trees into agricultural fields and around homesteads.
It is often difficult to find land for tree plantations, especially in areas where the need for agricultural land, both by refugees and locals, is perceived as greater than the need for forest plantations. Land used for plantations effectively removes land from agricultural production, potentially undermining the ability of refugees and locals to derive a sustainable livelihood. Without a detailed cost-benefit analysis of the financial viability of plantations, it should be assumed that land is best used under a system of community-based management of existing natural resources (indigenous trees, grazing, etc.).

If plantations are to provide environmental benefits they must be created in such a way that they can be harvested over a number of years, rather than all at once.
In refugee situations, plantations are commonly established in a single planting. Single plantings, however, means that all of the trees are harvested at the same time. Such clear felling creates a serious risk of soil erosion, and threatens streams and rivers with siltation. A single harvest will also provide the plantation owners with one large cash injection, as opposed to smaller but more regular incomes if harvesting is staggered over time. In view of these factors, it is more appropriate to create plantations in a number of annual plantings.

The environmental benefits of plantations are often much lower than those of other forms of forestry activity.
Plantation forestry is essentially an economic activity rather than a sustainable environmental management practice. Stands of a single species inhibit understorey growth which, in turn, adds to the risk of soil erosion. There are many other forestry practices that have more environmental benefits or which yield a variety of valuable products (nuts, medicinal plants, etc.) and can therefore be more appropriate for the purposes of sustainable environmental management. These include, for instance, the management of individual trees in fields, maintaining areas of indigenous woodland, planting for soil stabilisation, and management of water catchment areas.

Plantations pose a greater fire risk than individual trees in fields or around homesteads.
Fire is a recurrent problem in forestry plantations, particularly those based on monocultures of exotic species. Fire management is a labour-intensive and costly exercise, justified only where the plantation is likely to provide substantial economic profits on harvesting. Planting of individual or small groups of trees in refugees' and locals' fields and homesteads does not pose the same risk of fire.

On government forest land, the '*taungya*' system can be a useful practice to combine plantation establishment with refugee labour and food self-sufficiency.
The *taungya* system allows people to grow food crops between young trees (see Case Study 11). For the land owner, often the government forestry department, this ensures that the trees are properly weeded and cared for during the first growing seasons. For the farmer (or refugee), temporary access is provided to agricultural land and there is an opportunity to grow crops for subsistence or sale. Provided clear contracts are in place at the outset to ensure that settlers do not exceed their allotted time of occupancy, the *taungya* system can cost-effectively establish or rehabilitate plantation areas.

3.1.6 Integration and Local Participation

Forestry plantations established by external organisations, using paid labour, will not be protected by local people and management responsibility cannot easily be handed over to them at a later date.

Reforestation programmes established by the government, NGOs or other external organisations, which use hired labour to plant and manage trees, make it difficult to ensure that they are sustainably managed at the end of a refugee programme. Locals, by virtue of the fact that the trees under such systems are seen as the property of the state or the project, feel that they have little stake in the trees as a resource and thus little incentive for nurturing their survival. Even if the trees are handed over to locals, it will be difficult to convince people that the trees are now their property. In view of this, plantations established using paid labour are best maintained under government control throughout.

Case Study 11. Combining environmental rehabilitation with food production: The *taungya* system in Côte d'Ivoire

From 1990 to 1994, 325,000 Liberian refugees fled to Côte d'Ivoire, settling spontaneously in a 25km wide strip along the country's western border. Several forest reserves and a national park were threatened by encroachment from the new arrivals. On the western border of the Haute-Dodo Forest Reserve, for example, the population density increased from 26 people/km^2 to 68 people/km^2 during this period. Incursions for wood products and raffia palm became commonplace and unauthorised refugee cultivation started within several gazetted areas.

The Ivorian forestry department, SODEFOR (Société pour le Développement des Forêts), is responsible for managing the country's forest reserves. Prior to the arrival of the refugees, SODEFOR already had plans to rehabilitate some 17,000ha in the Haute-Dodo Reserve: implementation of the programme became all the more pressing when damage began to occur on account of the people's needs. SODEFOR decided to turn the refugees' presence to its advantage by inviting them to cultivate in areas designated for rehabilitation under the *taungya* system. This agroforestry system permits farming between rows of newly planted trees. The advantage for the forester is soil and water conservation and minimal weeding. The farmer, meanwhile, gains access to productive land for a period of time until root competition and shade from the growing trees becomes too great for continued crop production, typically two to four years in Côte d'Ivoire.

In a pilot scheme with UNHCR, SODEFOR identified 50ha for *taungya* trials in 1996. This was planted with *framiré,* a local commercial species used in construction. Refugees were then allowed to plant rice and maize between the newly planted trees. There is now a 10-year plan to put a further 150ha under the *taungya* system through a series of 25ha contracts with refugee groups.

Provided clear contracts are established at the outset to ensure that contracted refugees do not exceed their allotted time of occupancy, the *taungya* system can be a cost-effective way to establish or rehabilitate forest plantations, while at the same time improving food security and creating a sense of self-determination and independence among refugees. While refugees are given no long-term rights over the forest land, the possibility of cultivating crops provides them access to fresh food and a source of income from the sale of surplus crops. They also gain basic technical expertise in forestry. Meanwhile, UNHCR and SODEFOR have a productive working relationship which combines humanitarian assistance and environmental rehabilitation. The *taungya* system can work elsewhere provided host-refugee relations are good and that the government allows refugees to cultivate the land.

Success of reforestation programmes should be measured against a broad set of indicators, drawn up by the local community, that attempt to quantify environmental, social and economic benefits.

In many countries, successful reforestation is measured against the tangible, physical outputs of seedlings from nurseries and hectares of plantation established. This is misleading in that it can portray a project as highly successful when in fact its benefits have been unquantified. Very low survival rates may occur after a few seasons; this will not be recorded by traditional monitoring criteria. Local communities are the most qualified to measure positive change. Typical indicators will be useful in measuring physical outputs as well as environmental, social and economic benefits (e.g. soil protection, availability of forest products, increased income) of the reforestation programmes.

Local people often take the initiative for rehabilitation following refugee damage. There may be a contradiction between tree planting for commercial and rehabilitation purposes.

Local people are often more interested in tree planting for commercial gain (e.g. through woodlots and fruit orchards) than straightforward environmental rehabilitation. The differing requirements of income-generation and environmental rehabilitation should be reconciled as early as possible, such that the needs of the local community are met without compromising the long-term objectives of rehabilitation. One way of achieving this might be to incorporate multi-purpose trees into arable and grazing lands, as part of an integrated agroforestry system.

3.2 Community-Based Strategies for Natural Resource Management

- ✔ Community-based natural resource management is not suitable for every refugee situation.
- ✔ Where it is appropriate, it may serve as a sustainable environmental protection strategy.
- ✔ Support may be required to existing community-based management systems following arrival of refugees.
- ✔ A broad-based approach to environmental management, focusing on the economic role of indigenous resources, may be more sustainable than a narrow focus on a single resource.

Community-based natural resource management (CBNRM) is the most sustainable environmental protection strategy in the long-term.

Most environmental management strategies in refugee situations are dependent on continued donor support. For long-term refugee operations, empowerment of refugees and local communities to manage natural resources becomes the most sustainable possibility.

CBNRM is inherently participatory, but efforts should be made to ensure fair representation.

CBNRM is a participatory process, offering an important tool for community empowerment. Nevertheless, communities are not homogenous and the opinions of powerful groups can dominate those of weaker members. At the same time, the more marginalised are most likely to be negatively affected by the presence of refugees. CBNRM therefore demands consensus in the face of multiple agendas and this may be difficult to achieve.

Refugee influxes place great strain on community-based management structures which consequently may need support and strengthening.

Refugee influxes are often rapid and may disrupt the slow institutional development needed for effective CBNRM. External support, guidance and facilitation can help prevent community-based institutions from being overwhelmed by the presence of refugees. For example, communities can be given environmental responsibility at an early stage; information flows can be facilitated between communities and refugees; conflicts between the two groups can be openly addressed; and communities can be engaged in planning.

When refugees participate in the design and construction of energy-efficient stoves, important factors such as cultural traditions are not overlooked. Efforts should be made to also promote energy-saving practices (such as chopping wood into small pieces or removing logs from the fire when cooking is finished).

Photo:
UNHCR/ Ritchie.
Mesa Grande, Honduras.

CBNRM is not always appropriate; communities may not want it, and it may not work.

Communities may not want to take on natural resource management and conservation. They may also lack the capacity to do so, particularly where a refugee influx is large. It is therefore important to be realistic about what CBNRM can achieve.

Employment of community-based extension agents within CBNRM programmes can prove divisive and may not provide an efficient mechanism for promoting that community's empowerment in regulating of natural resources.

The identification, training and especially the payment of extension agents carries the risk of dividing communities, rather than encouraging them to take control of natural resource management. In many cases, encouraging community-based extension agents to go beyond simple messages on tree planting and promote community participation can prove challenging. Working directly through NGO field officers, external to the communities and with a significantly higher level of education may be more effective. These officers act essentially as facilitators, but are also capable of providing technical support and training, depending on the local situation as well as existing local experience and capacity.

Any attempt at community management of forest resources should be fully delegated, without subsequent interference.

Community ownership of a resource gives people the right to harvest and use resources as they see fit. Although efforts should be made, through education and training, to ensure that communities manage their resources in a sustainable manner, regulations that prevent them from harvesting selected resources should be avoided. This effectively alienates them from the resource, taking it out of their control and eliminating the incentive for sustainable management.

A broad-based approach to environmental management, focusing on the economic role of indigenous resources, may be more sustainable than a narrow focus on a single resource.

Local communities are more likely to consider the net economic benefits of different land-use alternatives, rather than maximise any single output. Although planting woodlots of fast-growing tree species can increase energy supply, rural communities may have little interest in devoting arable land to planting something they would normally obtain from their own plots or from natural regeneration in grazing areas. Communities will only become interested in reforestation activities by realising an economic benefit from woodland products. On-farm nurseries, if combined with vegetable gardens, are also likely to be more appealing. **Case Study 12** illustrates the benefits to be gained from considering the whole 'livelihood environment', rather than focusing on protection or rehabilitation of a single threatened resource.

Successful and sustainable reforestation depends to a large extent on understanding and working within the prevailing systems of tree and land tenure in local communities.

Investment in a resource is heavily influenced by an individual's rights, access to and control over that resource. Whenever trees are planted or protected as part of an environmental mitigation or rehabilitation strategy, it is imperative that the ownership rights of the trees' eventual users are clearly established at the outset. Understanding the complexities of tree tenurial systems outside government-declared reserves can be daunting. However, local government authorities and non-governmental and research agencies often have knowledge and experience in this field. Their advice should be sought at an early stage in the planning of environmental rehabilitation strategies.

Case Study 12. Understanding the livelihood environment: SAFIRE responding to local rehabilitation concerns in Zimbabwe.

Zimbabwe's Mozambican refugees repatriated in 1994. The five camps that had previously housed 150,000 of these refugees were quickly vacated, and the task of environmental rehabilitation began. Since 1992, the Fuelwood Crisis Consortium (FCC) had undertaken environmental activities in the camps, concentrating on the provision of improved stoves, environmental awareness raising and tree planting. FCC's objective was to alleviate the effects of deforestation. Once the refugees had left, an opportunity existed for full environmental rehabilitation of the affected areas.

FCC conducted an environmental impact assessment to study the extent of degradation around the former camps. The study concluded that the overall change in forest land was from 78 per cent of the total area during 1981-82 to 33 per cent during 1994, with much of the 12,000ha of forested land lost being converted to bush scrub savannah and scrub savannah.

At the completion of its mandate in 1994, the FCC was transformed into a new organisation, the Southern Alliance for Indigenous Resources (SAFIRE), the initial goal of which was environmental rehabilitation of Zimbabwe's refugee-affected areas. Unlike FCC, SAFIRE was conceived as a long-term initiative, concerned with ongoing community-based natural resource management. SAFIRE sought the input of local communities in determining priorities for environmental rehabilitation. It also developed natural resource management projects on the principle that a broad-based approach to environmental management focused on the economic role of indigenous resources would be more sustainable than a narrow focus on trees – this was borne out by the issues and constraints articulated by refugee-affected communities.

One of the early project ideas, planting trees for firewood (to 'replace lost firewood resources'), was seen as unsustainable as a project goal because the target communities had little interest in devoting arable land to planting something they would normally obtain from grazing lands. The same applied to tree nursery planting, unless there was going to be a ready market for seedlings. Only by realising an economic benefit from woodland products would communities become interested in reforestation.

While locals were interested in tree planting for commercial gain (especially in woodlots and fruit orchards), SAFIRE's initial concern had been for environmental rehabilitation – two quite different goals. It became necessary to reconcile the differing requirements of environmental rehabilitation and income-generation, such that the needs of the local community would be met without compromising the long-term objectives of rehabilitation. SAFIRE progressively altered its aims to coincide with those of local people, eventually abandoning the notion of environmental rehabilitation for its own sake. SAFIRE's stated goal became "the economic development of rural communities based on sustainable management of natural resources." This implied that post-repatriation environmental rehabilitation activities would only be warranted where environmental degradation had inhibited the capacity of local communities to derive a sustainable livelihood from their natural resources. Thus SAFIRE focused on tree planting and other resource management activities with the specific objective of contributing to local income.

This experience shows that local people are often less concerned with replacing trees destroyed by refugees than they are with ensuring the sustenance of a natural resource base that best meets their long-term economic needs. This demands an appreciation of the 'livelihood environment', rather than the sole concern of lost trees.

3.3 Protected Areas

- ✔ Prevention before cure should be a key policy to avoid environmental degradation in protected areas or other sensitive ecological zones.
- ✔ Restoration of damaged areas is costly and often impractical.
- ✔ Boundaries of protected areas or other key sites must be clearly demarcated. Forest guards (from local communities as well as the refugee population) may be employed.
- ✔ Rehabilitation of protected areas should begin while refugees are still present.

Vegetation around homesteads can bring numerous benefits such as fodder for animals, wood for cooking, non-wood products such as nuts and fruits, windbreaks, etc.

Photo
UNHCR/ W. Stone.
Dadaab Camps, Kenya.

Rehabilitation of protected areas is extremely costly. Emphasis should therefore be on prevention rather than cure.
Where wildlife reserves, national parks or forest reserves are impacted by refugees, loss of habitat, deforestation and poaching can have severe ecological and economic implications. The cost of rehabilitating protected areas, perhaps by transporting wildlife for restocking or establishing protective buffer zones to allow vegetative regeneration, can be enormous. Appropriate site selection, together with a small investment in the early stages of a refugee programme through community extension and improved policing, can do much to avert this type of problem.

When the presence of refugees is damaging to protected areas, emphasis should be placed on demarcation, protection and enforcement, ideally with community backing.
If refugee settlements have been placed close to a protected area, it is important that the boundaries of that area are quickly demarcated. This may require nothing more than cutting a fire break or placing concrete beacons around the perimeter of the park. Where demarcation lines are less obvious, agreement should be sought on the positioning of boundaries.

Support should then be given to the relevant management authorities to enforce regulations on access and extraction of tree and animal products. While outside agencies may be reluctant to get directly involved in such enforcement, they should be able to provide assistance to overburdened management institutions that are formally tasked with this role. Possible ways in which to intervene include the provision of transport or communication equipment, and construction of houses or ranger posts.

Where refugee encroachment threatens protected areas, the siting of exotic trees along the boundary can provide a visible sign that the land on which they are planted is not to be settled.
Where refugee settlements are situated close to forest reserves or other protected areas, people will be tempted to trespass, perhaps clearing forest in the process for cultivation or to collect forest products for domestic use or sale. Planting exotic trees along the boundaries of such areas can be an effective means of demarcating the limits of a reserve, and thus deter encroachment. The purpose of any such activity should be clearly explained to local communities and refugees.

If protected areas have been damaged, rehabilitation should begin while refugees are still present.

It is sometimes impossible to prevent damage to protected areas. In such cases, it is likely that UNHCR and/or donors will be obliged to support rehabilitation activities. These should begin while refugees are still in the area in order to use the interest of donors and implementing agencies, while attempting to limit the extent of further encroachment and degradation. The most effective strategy will normally be to channel funding through appropriately qualified government agencies or NGOs.

3.4 Domestic Energy

- ✔ Energy supply and demand assessments should be instituted. An effective energy strategy should examine alternative energy sources in addition to promoting energy savings.
- ✔ Promotion of energy-efficient stoves must be carried out in conjunction with other environmental protection/management activities.
- ✔ Promotion of familiar fuels and cooking systems should take priority over unfamiliar ones.
- ✔ Energy-saving devices should be earned and not provided free of charge.
- ✔ Wherever possible, stoves should be manufactured on site and by the refugees themselves.

Energy supply tends to be the most serious environmental issue associated with refugee camps.
While the use of timber and poles for construction of refugee huts can have significant short-term impacts, harvesting of firewood by refugees is generally the most environmentally damaging activity in refugee situations in the medium- to long-run.

The promotion of energy-efficient cooking systems is a useful component of environmental programmes, but their potential should not be over-estimated.
It is desirable and cost-effective to promote energy-efficient cooking devices for refugees as one of the first steps of an environmental programme. Tree planting, tree protection and managed regeneration of biomass should be simultaneously addressed. Under the right conditions, and if properly used, improved wood stoves offer the potential to save 20-30 per cent of the energy used in cooking with traditional open fire systems.

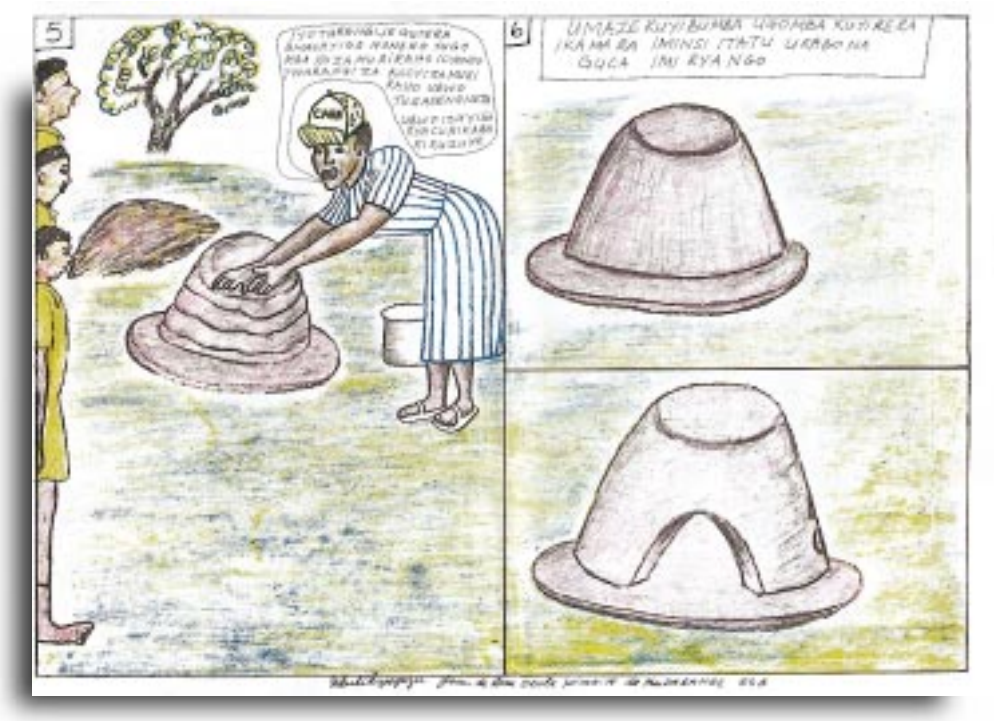
Promotion of familiar fuels and cooking systems should take priority over unfamiliar items.
Stoves should be designed around the dominant fuels that are used and the cooking styles employed; locally-produced models should be offered. Stoves and other cooking devices which use familiar and convenient fuels and which can be manufactured on site (e.g. woodfuel appliances) are generally cheaper and are more likely to be adopted and used in an energy-efficient manner. Only following a multi-criteria assessment that highlights specific reasons to change should efforts be made to promote less familiar energy sources and technologies. Such alternatives should be integrated into broader energy and environment programmes.

Energy strategies should examine alternative energy sources and promote energy savings.
The possibility of using alternative fuels should be considered, based on a comparative assessment of their cost, familiarity, ease of use and environmental implications. The most suitable energy source should be decided after a thorough examination of the environmental and economic costs, as well as refugee preferences. In many places, wood is the obvious choice.

Solar cooking has potential application for some refugee households in semi-arid areas.
Solar cooking has been promoted as an alternative energy system in some refugee settlements. It could supplement established environmental programmes, providing a technology which some refugees may find useful in reducing their firewood needs or achieving social benefits. It is not cost-effective to run solar cooker programmes independently or in the absence of integrated energy and environment projects.

An energy supply and demand assessment should be carried out for each refugee operation. It is essential to have reliable information on the supply and accessibility of wood and other forms of renewable energy, in addition to substitute fossil fuels and their practicability of use. For this, local inventories are required or available information should be obtained on the biomass growing stock, annual yield and land-use types. Accurate data on refugee energy consumption levels and energy-use habits and preferences are also needed. These surveys can help ensure sustainable short- and long-term energy supply and should form the basis for an ongoing energy research and monitoring programme.

Household technologies must be tested and developed with refugees before being introduced. Cooking devices are an integral part of kitchen operations and household management, and it is generally refugee women who are in charge of cooking and domestic affairs. Given this central role of cooking systems and of many women in the home, it is essential that women are not excluded in the design and selection of cooking devices to be promoted in the refugee setting. At the same time, projects of this nature should not exclude or alienate men; their acceptance of new technologies is also important as they are often involved in building and/or procurement. In some cases refugees may already be aware of suitable appliances. In others, a range of locally-available alternatives may need to be offered for testing.



Drawing used in awareness raising programmes for fuel-efficient stoves in Tanzania

Central cooking is an effective way to limit consumption of fuelwood.
Although institutional stoves can achieve up to 80 per cent savings in daily per capita wood consumption, they can have particularly negative social consequences by disrupting family cooking units. Centralised cooking may be appropriate in situations such as transit camps, or camp centres like hospitals and schools.

Economies of scale may be achieved by avoiding very small cooking groups.
Modest pooling of cooking resources should be encouraged. Given that per capita energy consumption rises exponentially as the size of the cooking group decreases, a particularly effective measure is to eliminate cooking by couples or individuals. Consolidating cooking groups above seven or eight people per pot however can be less socially acceptable and has progressively smaller environmental benefits.

Clustered living arrangements or the distribution of larger pots can encourage shared cooking.
Clustering refugee shelters around small communal areas is more likely to lead to the adoption of shared cooking rather than straight lines of shelters with doors facing the same way. Likewise, when larger cooking pots are provided, families can bulk cook some of their food, or share cooking with others. Providing families with energy-saving possibilities such as these, rather than obligating them to share on a larger scale, is a more acceptable means of facilitating energy conservation.

Energy-saving devices should be earned, not given.
Any 'environmental' item intended to benefit refugees (such as improved stoves, tree seedlings or firewood) should, in principle, be earned rather than given. This encourages sustainability in dissemination, brings value to environmentally-sound behaviour and highlights which products are in demand. In many relief situations, subsidised or free distribution of energy-saving devices will not prove efficient.

The way a cooking system is used is as important as the technology itself.
An improperly used woodstove may be no more efficient than a well-managed open fire, whereas a family practising proper firewood preparation and cooking techniques can multiply the benefits they achieve through the use of such improved devices. The existence of a limited fuel supply can promote the use of technologies intended to lead to fuel-efficiency.

The right cooking techniques can save as much energy as the right technologies.
Refugee families can implement a wide variety of energy-saving practices when cooking which save quantities of fuel far in excess of what an improved stove alone can offer. These include the cutting and drying of firewood, careful control of the fire and its air supply, gentle simmering, prompt extinguishing of the fire, pre-soaking of hard foods, and use of lids. A narrow focus on technological solutions is therefore to be avoided and the breadth of possible adaptations to cooking systems must be appreciated (see Case Study 13).

Mud-stoves should be constructed by the refugees themselves.
An approach under which extension agents build stoves for refugees, or provide them free of charge, may result in rapid and widespread dissemination of the technology, but often leads to their abandonment within a short period. An approach that promotes user-built stoves (mud-stoves, in many cases) is more sustainable.

Pre-fabricated stoves should normally be manufactured on-site.
If pre-fabricated stoves are to be considered, such as those made of metal or fired clay, an on-site production facility is a sensible manufacturing strategy. It reduces transport costs, minimises breakage, and can eventually enable refugees to take over production as a skills development and income-generating activity.

Case Study 13. Cooking techniques and cooking technologies: Realising the full benefits of improved cooking systems in Goma, Democratic Republic of Congo.

From July to October 1994, some 730,000 Rwandan refugees arrived in Goma and were settled in three large camps later expanded to five. The Virunga National Park, a World Heritage Site, was placed under particular threat by refugees seeking firewood and building materials. An emergency environmental programme was started by GTZ and focused initially on Kahindo camp which bordered the park. IFRC later expanded the initiative to include Kibumba camp. GTZ provided a local NGO with technical and financial support to implement similar activities in Lac Vert camp in 1995. Together these camps housed 365,000 refugees.

Firewood was the main cooking fuel among the refugees, based on the traditional open three-stone fire. GTZ prioritised the introduction of more efficient systems, and concentrated particularly on promoting wind shields made from the abundant basalt rocks. Other agencies, such as the American Refugee Committee in Mugunga, promoted more complex fuel-saving technologies made from metal or fired clay.

Recognising that improved technologies would not automatically lead to fuel-saving, GTZ also emphasised energy-saving cooking techniques. These included better firewood preparation (cutting, splitting, drying and storing), efficient food preparation (cutting hard foods in small pieces, pre-soaking maize and beans, preparing all ingredients before cooking), and careful cooking (gentle simmering as well as use of lids, weights on top of lids and less water).

Energy-saving practices were promoted through an extensive awareness raising programme carried out by refugee trainers. This reached more than 70 per cent of the refugees. In addition to practical aspects of fire preparation and protection, training also covered kitchen hygiene, nutrition and the economic benefits of energy-saving practices. Modified cooking habits resulted in more significant energy savings than improved stoves. Initial energy-saving estimates of up to 40 per cent with improved stoves were later reduced to a maximum of 20 per cent.

The GTZ experience in Goma highlighted an important aspect of improved stove programmes with refugees. The promotion of better cooking techniques was found to be much more than a useful supplement to a stove promotion programme, ultimately proving fundamental in achieving the desired energy savings and environmental benefits.

The principles of a fuel-saving stove are fundamental.
Poorly trained extension agents might promote a particular stove design that has rigid dimensions, leaving the refugee family with little incentive to take their own initiative. This reduces understanding and ideas of ownership or commitment. It is preferable to encourage initiative, imagination and diversification, based on an understanding of the basic principles involved – those of controlling the air flow and containing the fire.

Fuel-saving stoves may lessen energy consumption, but do not guarantee reduced deforestation.

Wood products have multiple uses for refugees and lower household energy consumption will not necessarily result in reduced deforestation. In cases where domestic wood consumption declines, commercial usage of firewood (e.g. brewing, brick-making, or sale to local people) may increase.

3.5 Organised Energy Supply

- ✔ Organised fuel supplies may, under specific social and economic conditions, be appropriate.
- ✔ Supplying fuelwood free of charge does not necessarily reduce environmental damage.
- ✔ Free fuel distribution (of a high quality fuel) may be effective where the cost of that fuel is already low.
- ✔ Delegation of fuel distribution to refugees may cut down on losses and reduce conflicts.

Under specific social and economic conditions, organised fuel supply to refugees may be appropriate.

There may be a particular local issue that makes fuel supply a necessity, such as the protection of fuel gatherers from assault outside the settlement, or the conservation of an ecologically sensitive area. Organised fuel supply will be effective only if the fuel has low value locally (so that it will not be sold) and if it has the long-term commitment of a donor. An evaluation of energy supply and demand from an environmental, social, technical and financial point of view should be carried out first. Case Study 14 gives an example of effective, organised fuel supply to refugees.

Supplying free firewood to refugees is costly and logistically challenging. It may reduce the value placed upon wood and does not necessarily reduce environmental damage.

It cannot be assumed that fuelwood consumption by refugees can be replaced by a centrally-supplied ration, and that this will reduce tree cutting. Reasons include:

- refugee consumption will tend to go up once energy is supplied and the ration is only a proportion of what is actually consumed;
- refugees will continue to gather wood from local sources;
- supply costs can be considerable, particularly compared with the economic value of the protected resource; and
- free supply undermines the value of firewood as a natural resource and can thereby contradict efforts to protect forests and encourage tree planting.

Considering its costs and implications, firewood supply should be attempted only under specific local conditions, such as in regions completely devoid of biomass or where areas of unique ecological significance are at stake.

Free supply of a high quality fuel (such as kerosene) may prove effective in cases where its local value is low.

Refugees are likely to convert to a high quality fuel if it is offered to them, and thus discontinue the use of firewood and charcoal. The local re-sale value of any such high quality fuel, normally kerosene, should be low, otherwise refugees might be inclined to sell or exchange the fuel with nearby communities. When host governments subsidise alternatives fuels, incentives for refugees to sell fuel locally are minimised.

Organised fuel supply requires a multi-year funding commitment.

Fuel supply can be expensive and, once initiated, hard to suspend. Donor agencies and UNHCR must make a clear funding commitment to any such activity.

Case Study 14. Organised fuel supply to refugees: A site-specific appropriate response to environmental concerns in Nepal.

Experiences with organised energy supply have been mixed. Costs can be high and the impacts not always as expected. An example from Nepal shows how, under the right conditions, energy supply can achieve positive environmental and social results.

Some 100,000 Bhutanese asylum-seekers fled to Nepal between 1990 and 1993: 90,000 remain in seven camps in the south-east. This is a productive agricultural area and also one of Nepal's most densely populated regions. Since the 1960s, there has been significant in-migration from the north. Pressure on remaining forest areas is severe, and with the refugee influx and associated demand for firewood, environmental concerns came quickly to the fore. Although environmental impacts were not quantified, refugees were said to be damaging natural forests and commercial plantations of sissau (Dalbergia sissoo). This led to resentment from local communities, who had to compete with refugees for limited energy supplies, as well as complaints from the Nepalese government and its forestry department.

A decision was taken to supply the refugees with kerosene and suitable cooking stoves, in the hope that this would reduce firewood consumption and thereby address the environmental concerns and conflicts that had arisen. From 1992 onwards, following a pilot period of stove testing and appraisal with refugee women's groups, a programme of fuel supply began. Refugees were allocated one litre of kerosene per week for families of up to three persons, and 0.5 litres extra for each additional family member (acknowledging the economies of scale achieved in larger cooking groups). They also received a new stove every two years. Fuel was purchased through the Nepal Oil Corporation, delivered to underground tanks in each camp by the Nepal Red Cross Society and distributed at camp level by the refugees. Losses were less than 1 per cent under this arrangement, although they had been as high as 10 per cent when agencies were managing the distribution. Up to 3.5 million litres were supplied annually, at a total cost for the programme of about US$600,000.

The fuel met the majority of the refugees' energy demands and resulted in a dramatic reduction in firewood harvesting. Likewise, tensions between refugees and local people, as well as between relief agencies and the host government were reduced.

Organised fuel supply should not be the response to all energy-related environmental problems. Although this approach had positive results for a range of stakeholders in Nepal, the specifics of the local situation were important. Kerosene, although a high quality fuel, had a low re-sale value due to state subsidies. This prevented black market behaviour and the continuation of firewood harvesting. Refugees, local communities and the government strongly supported the programme which received long-term UNHCR commitment. Likewise, refugees themselves were responsible for kerosene distribution, thus reducing outside intervention.

Losses will be reduced and conflicts internalised when refugees themselves manage distribution.

If refugees are responsible for the distribution of fuel within camps, chances for efficiency, fairness and transparency are increased. This set-up is also considerably cheaper, although it requires a well-developed and participatory management system. UNHCR and the government must be willing to assign a significant share of camp management to refugees.

3.6 Environmental Education

- ✔ Targeted environmental awareness campaigns are useful in developing appropriate environmental practices.
- ✔ Integrating environmental concepts into existing school curricula may be more readily accepted by teachers than adding a new subject.
- ✔ Environmental education should be used to strengthen ongoing or planned environmental activities in associated projects.
- ✔ Multiple entry points exist for environmental awareness raising.
- ✔ Environmental awareness raising targeting local communities must be accompanied by appropriate capacity-building measures for local resource management.

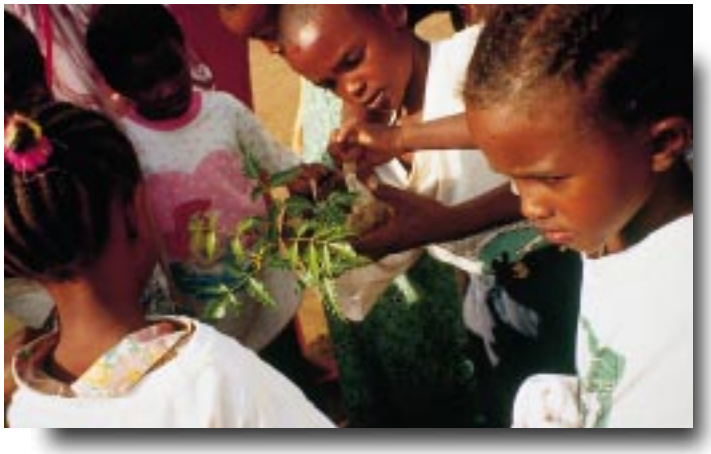
Education has primarily long-term impacts and should be supplemented with short-term regulatory measures and public information messages on environmental protection.
Environmental education should be seen as a continuous and multi-sectoral process, as well as a tool for stimulating reflection, discussion and decisions on environmental issues and problems. As it focuses on changes in perceptions and attitudes, environmental education does not generate rapid impacts. It should be supplemented with shorter term regulatory measures and public information campaigns to limit immediate damage to natural resources.

Early, targeted environmental awareness campaigns are valuable in setting the parameters for sound environmental behaviour.
Awareness programmes should be introduced before refugees have established environmentally damaging systems of behaviour that are difficult to change – for example, in the styles of shelter they build, the areas in which they cut trees, or the cooking systems they use. Messages to be communicated typically relate to local and/or national bans, for example, which practices are permitted and which are discouraged or prohibited.

Environmental concepts can be integrated into formal education programmes.
Possible approaches to formal environmental education include supplementing the existing curriculum with additional environmental materials, or developing a separate package of awareness raising materials. Decisions on whether to introduce environmental education as a separate theme should be made as early as possible. Evidence from past efforts suggests that infusing environmental concepts into curriculum is more readily accepted by teachers than adding a new subject.

Environmental education should be relevant to the needs of refugees and local communities.
Refugee situations occasionally call for the development of new educational materials to address the teaching and content needs of refugee and returnee audiences and situations. In developing such materials, it is important to work closely with refugee teachers, implementing partners and often local actors, as this promotes a sense of ownership.

New teaching methods may require improvements in teachers' competencies.
In some cases, it may be appropriate to adopt new teaching approaches (e.g. activity-based and problem-solving approaches) to environmental education. These approaches may demand new skills and competencies from teachers and trainers, with a likely shift away from didactic to teacher-centred methods. Capacity-building may be required to develop teaching methods and resources.



Environmental education should be closely tied to broader environmental programmes, such as efforts to minimise deforestation or promote tree planting in and around camps.

Photo:
UNHCR/ M. Batong.
Kakuma Camp, Kenya.

Formal and non-formal approaches should be harmonised for better results.
Non-formal approaches will be more effective if a 'whole school approach' to environmental education is adopted. Schools must not be treated as 'isolated islands of knowledge'; they must be seen as part of the community. Likewise, the community must be brought into the schools, for example, through camp/settlement environmental working groups. Topics should be related to day-to-day life.

Environmental awareness raising can promote participation in environmental problem solving.
Environmental activities which involve target communities in problem identification and analysis, planning, implementation and evaluation are more likely to have the desired positive impact.

Environmental education should build upon existing ecologically sustainable knowledge and skills.
Refugees and host communities have considerable environmental practices to share with one another. Effective environmental education should target community groups, including women's groups and youth associations, which have the capacity and will to promote sound environmental management.

Multiple entry points are available for environmental awareness raising.
Non-formal environmental education can be channelled through health programmes, adult literacy classes, video sessions, religious services, notice boards, drama and poetry festivals, competitions, etc. Networks of community services and health workers can be particularly effective in passing on appropriate environmental messages, given adequate training.

Environmental education activities should minimise reliance on materials not locally available.
Acknowledging that educational facilities and teaching resources in refugee situations are often limited, the incorporation of locally-available materials for environmental education and reference to local situations and problems can promote greater uptake, applicability and sustainability. Environmental education activities should be made simple and locally appropriate in order to minimise the likelihood of dependence on external support for their continuation.

Environmental education and awareness raising should be closely tied to broader environmental programmes.
Environmental education should be fully integrated with ongoing efforts to promote environmentally-sensitive behaviour. Linking environmental educational programmes to particular aspects of refugee life is not always easy, particularly when curricula is nationally standardised and exam-oriented. Building such linkages can broaden the refugee and local community's interest in environmental concerns.

Environmental awareness raising and training must include measures to empower communities and their management institutions.
Training and educational initiatives undertaken with local communities will have limited impacts if these communities are unable to put the lessons into practice. Land access rights, institutional capacity and appropriate incentives can better ensure participation in sustainable management activities.

3.7 Refugee Diet

- ✔ The nature of food provided to refugees can influence their demands on the environment.
- ✔ Energy requirements of rations should be carefully assessed and closely monitored.
- ✔ Early notification should be given to any intended changes in food rations.
- ✔ Food-for-work programmes need to carefully assessed.

The type of food aid can affect energy consumption and demands on the environment.
The make-up of the food basket can determine refugee energy consumption, influencing firewood demands and hence the scale of environmental impacts. Certain foods, particularly unmilled cereals, beans and some lentils, require longer cooking time.

The energy requirements of cooking the refugee ration should be assessed.
In addition to the cost, and nutritional and cultural suitability of food rations, it is important, for environmental reasons, to assess the fuel required to cook it. According to the joint UNHCR/WFP Memorandum of Understanding, this should be a prerequisite for food supply.

WFP and its partners can take appropriate action if particular foodstuffs are found to be environmentally damaging.
It may be possible to decline certain food donations that are old stock or based on their consequent energy demands for cooking. Milling maize prior to distribution is strongly recommended. Private milling by locals can be extremely costly for refugees; likewise it takes time for private millers to become established. Due to reductions in bulk and thus lowered transportation costs, it may prove cheaper to mill a portion of the maize prior to transporting it to the camps.

Using carefully chosen indicators, close monitoring of refugees' coping mechanisms allows for an assessment of the potential environmental impact of modifying the food basket.
Once refugee coping mechanisms are properly understood, likely impacts of reducing food allowances can be estimated. A range of suitable indicators can be collected, including local market prices for staple food commodities, fallow periods, wage rates for contract work, firewood prices and rates for lease of land. The socio-economic situation of refugees, including economic activities, access to resources and level of dependency on food aid, subsistence production and local market purchases needs to be understood. By monitoring refugee coping strategies, potential environmental impacts associated with changes in assistance can be estimated. Reducing food aid within refugee households will lead to altered coping mechanisms. Alternative income-generating activities are likely to increase, as the scope for sale or exchange of distributed food is diminished. This may lead to additional environmental impacts such as charcoal-making or firewood cutting.

Information sharing prior to any proposed change in a food aid strategy is key to well prepared and adapted compensatory activities on the part of the refugees.
Refugees should be made aware of a reduction in food aid rations well in advance so that they can adjust their activities accordingly. A sudden, unannounced cut in rations is likely to lead to refugees relying initially on exploitation of the surrounding environment.

Targeted food-for-work programmes can be useful in environmental protection or rehabilitation where short-term labour inputs are required, but should be seen as a means rather than an end.

Targeting of food aid can be linked to short-term labour inputs for protecting and rehabilitating the environment, for example, erecting flood control structures, preparing micro-catchments for trees, gathering live fencing material for regeneration areas. However, food-for-work is not sustainable and may even undermine local participation in community activities. The use of food to achieve pre-determined goals can be visualised in much the same manner as cash; in both cases, labour is used to carry out certain definable tasks against remuneration.

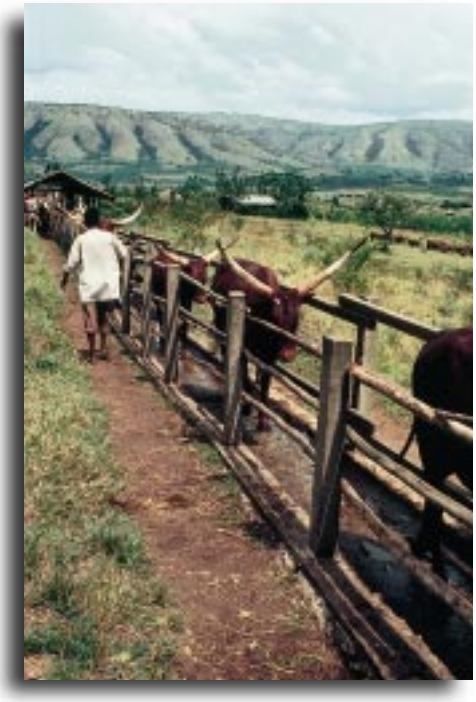
3.8 Livestock

The following lessons on livestock relate to pastoralist returnees. Observations are provided from a case study in the Horn of Africa, and should therefore be interpreted as being specific to local environmental conditions and particular systems of livestock and range management.

- ✔ Environmental implications of any livestock project need to be carefully evaluated.
- ✔ Re-stocking programmes, if judged suitable, should be an integrated part of the re-integration programme
- ✔ Any restocking programme should use local breeds and must be accompanied with appropriate health and husbandry support.
- ✔ Extension training to local para-vets is a cost-effective operation.

An environmental study should be undertaken before any livestock project is considered.
Any intervention in the livestock sub-sector, whether restocking, provision of water points or support to livestock health, will have environmental implications. There may, for example, be negative impacts on grazing areas or excessive demand on water supplies. Preliminary assessments of the likely impacts of any interventions, particularly re-stocking, are required.

Restocking is a viable intervention for pastoralist and agro-pastoralist returnees.
Restocking will often be necessary for returnees whose traditional livelihoods are based on livestock. However, there is no blueprint for such projects – each must be adapted to the particular circumstances of the society and environment within which it is to be implemented. The number of animals to be given to each household, for example, must be considered carefully and will depend on whether families plan to return to nomadic pastoralism or combine livestock keeping with farming. For families entirely dependent on pastoralism, 20-40 small ruminants are required, probably in addition to a supply of food, household goods and a beast of burden for transport. It may be enough to provide half this amount to those returning to agro-pastoralism.



Livestock restocking programmes should be based on traditional cattle varieties from the area in question.

Photo:
UNHCR/ J. Horekens.
Oruchiuga Settlement, Uganda.

Restocking should be an integral part of a broader and multifaceted re-integration programme.
Restocking is not, in itself, a solution to the problems facing returnees, even if those returnees are predominantly pastoralists. Not all returnees can be expected to benefit from re-stocking, due to the limits of rangeland grazing and water. Successful re-integration requires a revival of diverse economic activities alongside restocking, such as:

- promotion of off-farm income-generating opportunities through training and introduction of low interest credit schemes;
- provision of modern inputs to encourage intensification of agricultural production and increase productivity of cultivated land; and
- provision of food aid to those households that are food insecure.

Livestock programmes for returnees should be based on traditional cattle varieties from the area.
There are a number of benefits from confining cattle re-stocking programmes to local species. Indigenous livestock are more likely to adapt to the local environment and are less susceptible to disease. Purchasing live-

stock from local markets means that overall herd size is not increased and livestock are simply redistributed. Local purchase can also avoid introduction of diseases from elsewhere.

Restocking should be accompanied by improved, sustainable animal health care services. Owners of newly distributed cattle will require various services to increase productivity and to reduce morbidity and mortality; such services may not be immediately available or adequate in the returnee area. Start-up support should be given to establish livestock health care services, with the intention that they will become self-supporting. There will always be a few vulnerable families who are unable to afford such services, and they may require special provision.

Index