The environmental impact of sudden population displacements

Priority policy issues and humanitarian aid

Based on an expert consultation sponsored by ECHO,
and organised by CRED, Université Catholique de Louvain

Table of Contents

1. Introduction

1. On 22-25 September 1995, The European Community Humanitarian Office (ECHO) and the Centre for Research on the Epidemiology of Disasters (CRED) convened a consultative experts' meeting in Brussels on *"Policy Issues on the Environmental Impact of Displaced Populations During Emergency Phase"* to come up with policy parameters dealing with the relationship between environment and relief and population concentrations.

2. The meeting was convened with the recognition that the present humanitarian intervention, relief and emergency programmes give little to no considerations to the impact of displaced and refugees on the host environment. The total number of displaced peoples world-wide is estimated at about 42 million peoples: seventeen million refugees and twenty-five internally displaced persons. Most of these are in the developing countries, with about 4 millions in Eastern European states and the former Soviet Union. The environmental impacts of such population concentrations both on settlement and host environment is staggering.

3. The European Commission in 1995 spent over 500 million ECU (1 ECU = 1,35 US$) on refugees and internally displaced. The main countries absorbing these funds are Tanzania, Mozambique, Afghanistan, the Former Yugoslavia, and Liberia. Given the environmental impact of displaced populations, the Commission wishes to find approaches in which its emergency relief efforts can lessen the burden on the environment and as such contribute to future sustainable development.

4. The literature on environmental issues as linked to population displacements during emergencies is scarce and fragmentary. Displacement creates environmental degradation primarily for two reasons:

   - sudden concentration of large populations can strain the carrying capacity of the local ecosystem, and exceeds its capacity to absorb waste;
   - meeting the needs of displaced and concentrated populations often becomes a complex logistics and technical operation. In this context, environmental management becomes all the more difficult, and takes the back seat.

5. The environmental impact of mass displacement can be divided into two categories.

   - impact on the immediate human environment (e.g. food shortages, inadequate water supply and sanitation, etc);
   - impacts on the physical and natural environment (e.g. soil erosion, loss of biodiversity, etc.).

6. An appeal for urgent policy attention:

   The consultative expert group outlined the following areas of policy concerns which require urgent attention by the international community, multilateral, bi-lateral, national and local organisations; governmental and NGOs. These include.

i. giving energy needs the same status and priority as other basic needs such as food, water, health and shelter;

ii. securing shelter through the provision of suitable structural supports for shelter to minimise cutting of green wood and hence deforestation;

iii. linking sustainable agriculture with refugee programme thus engaging them in agricultural production to address environmental protection and promote development benefits to the local people;

iv. incorporating environment aspects fully in site selection and suitability, and developing suitable methods that do not isolate environment from other sectors;

v. promote indigenous knowledge sharing between local populations, displaced populations and agencies in order to minimise environmental damage and promote long term development;

vi. promote research on environmental impact assessment for monitoring, surveillance and impact (socio-economic and environmental) assessment systems; emphasise and encourage the need for effective and applied research;

vii. develop institutional capacity for camp environment monitoring and to raise environmental awareness for a health environment and sustainable resource management;

viii. building capacity for agencies not sufficiently equipped with environmental awareness and knowledge with the possibility of dissemination of UNHCR policy and guidelines which are currently under preparation with a view of harmonising relief agencies policy and, as such, facilitate co-ordination on the field, as well as enhancing other agencies environmental awareness.

2. Foreword

Over 90 % of the funds of the European Community Humanitarian Office (ECHO) are allocated to alleviate suffering in areas of conflict. In internal conflicts, which constitute the bulk of wars today - military victory has become but one objective. Systematic efforts are made to disempower the opposition, to deny it an identity, and to undermine its ability to maintain political and economic integrity.

Modern conflicts involve widespread physical violence against civilians, and against the basic resources on which people depend for survival. This has led to massive population displacements, with over 40 million people today being either refugees or internally displaced. Where it has been involved, the international community has traditionally reacted to such population displacements by intervening with humanitarian assistance.

However, the increasing frequency and complexity of the emergencies that lead to and follow displacement are prompting donors to take a harder look at the efficiency of relief. It is clear, for example, that the ad hoc provision of food and medicines does very little to tackle the environmental consequences of displacement. Relief as currently implemented, rarely considers the environment, which is a critical element for long term development. Indeed, and I am sure you will agree with me, in some cases, relief has even been counter-productive.

Total Commission aid to refugees and internally displaced in 1995 amounted to well over 500 million ECU. Countries such as Tanzania, Mozambique, Afghanistan, the former Yugoslavia and Liberia are requiring the greatest share of Commission funds. Additional funds, of course, are provided bilaterally by the Member States of the European Union.

The importance the Commission places upon this expert consultation, therefore, is clear. The Commission has already taken several steps in seeking to further improve the overall impact its relief efforts. Among other initiatives, the Commission established the ECHO Disaster Preparedness Programme in 1994. Since its inception, the Programme has focused on three main strategies for disaster preparedness. These are:

- human resource development,
- support to community-based, low-cost disaster preparedness and prevention technology; and
- strengthening management and institutional preparedness structures for increased response capabilities in emergencies.

All of these strategies are critical for the effectiveness of relief. Furthermore, I believe they are also critical elements to be considered in establishing sustainable and practicable approaches for the implementation of environmentally sound relief operations.

Preparedness is critical, as the degree of "surprise" determines the ability of national host governments and the international community, to limit the environmental impact of sudden population displacements.

To conclude, I would like to stress two interlinked points. First, no-matter how relief interventions are designed, they are bound to be either insufficient to meet immediate needs, or they suffer delays in delivery. Second, and consequently, in our efforts to find ways to enhance preparedness, let us not forget that in preparedness as well, sustainable solutions will emerge only if the environmental problems identified are seen to have causes and solutions rooted on the community level.

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3. Overview of policy issues

3. 1. Environment and sudden population displacement: policy issues for humanitarian action and development programmes

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Abstract

Mass displacements of people frequently create serious environmental, economic and social problems. These problems can be summarised by five parameters conditions of the displaced and the host environment:

1) health hazards emanating from sub-standard human dwellings and inadequate water and sanitation facilities;
2) food shortage and lack of alternative sources of subsistence for large numbers of people;
3) increased demand for resources for agricultural and grazing lands, especially in land-based societies;
4) capacity to absorb human and other waste; and
5) displacement trauma and its accompanying physical and mental health hazards.

Mass displacement of populations and their concentration in a small number of settlements may also perpetuate resource conflicts and competition with the local populations. Cases of deforestation, overgrazing, and depletion of fish resources have often been reported, with far-reaching implications for the security of the receiving populations. On the other hand, thoughtless or short-term relief aid often creates serious environmental damage ranging from food aid that requires extended cooking periods and, as result, encourages deforestation to production of non-degradable or medical wastes from massive relief operations. Pollution and depletion of water sources in around temporary settlements can also be problematic. Recent experience during the Rwanda crises has highlighted, in no uncertain terms, the immediacy of addressing the environmental issues both within relief activities and as part of a longer term strategy.

It is clear that operational guidelines will have to be drawn up for implementing agencies regarding environmental protection and care but before such practical guidelines be developed, the scope of the problem and the policy framework within which action can be proposed should be clarified. Two broad issues require specific attention. First, whether the available environmental impact assessment methodologies are applicable to emergency situations and, if not, how such a methodologies may be developed and implemented. Second, to identify the most compelling policy issues that need clarification to devise an appropriate environmental management strategy for mass displaced and refugee settlements.

1. Introduction

The total number of displaced peoples world-wide is estimated at about 42 million: seventeen million refugees and twenty-five million internally displaced people. Most of these are in developing countries, approximately 4 million in Eastern European states and the former Soviet Union. Various UNHCR documents on the flight of internally displaced peoples show that it takes the majority anything from a few days to a maximum of two months to assemble in large camps hosting between a few hundreds to a hundred thousands While it often takes internally displaced

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people longer before they leave their homes, war victims often move faster and within days constitute large population centres.

Mass displacement creates rapid and chronic environmental degradation for at least four reasons:

- The direct impact of a rapid population movement on the rate of resource consumption in a particular area is closely related to the carrying capacity of the region. Carrying capacity includes not only human populations, but also animal and plant populations.
- The pace of natural resource consumption is linked to the life styles in the developing world where the majority of the population, including the displaced, depend upon the environment for sustenance. Consequently, an accelerated pace of consumption increases ecological pressure and in most cases results in land degradation including soil erosion, overgrazing and deforestation. These negative processes are often aggravated by an increase in firewood consumption, clearance of virgin lands for cultivation and the demand for building materials.
- As a population moves rapidly and settles in large camps, often consisting of tens or hundred of thousands of people, the task of providing their basic needs becomes a complex exercise of logistics and technical quality. In the circumstances, ensuring appropriate environmental management becomes all the more difficult, with far-reaching implications for community health, waste disposal and sanitation.
- Mass population movement also contributes to a reduction of the environment's capacity to absorb waste such as garbage and human waste. This in turn contributes to health hazards and increases the risk of infectious diseases amongst displaced peoples. Such pressure in most cases affects the quality of the physical and socio-economic conditions available to both the displaced peoples and the host populations alike.

There are few circumstances where the problematic relationship between poverty and the environment becomes as acute as in the case of displaced peoples. For instance, in the entire African Sahel (Sudan, Mauritania, Mali, Sierra Leone, Chad, Ethiopia, Somalia and Djibouti) displaced people have had either to remain in already severely degraded environments, move to degraded environments or move to environments which they themselves begin to degrade after a few months of their arrival. Furthermore, they either remain within the confines of underdeveloped states unable to attend to their basic needs or protect fragile and vulnerable environments, or move to states facing similar problems.

In many cases, in particular in the African continent, displaced people, themselves the victims of environmental degradation, end up ruining their host environments by taking temporary refuge there. This occurs not because of their ambivalence to the environmental balance, but because they have few real alternatives. It is a tragic illustration of poverty and a lack of human resources as causes for pressure on natural resources and of a lack of prudent environmental management.

Until recently however, emergency concerns for refugees have concentrated exclusively on the provision of essential life-line support such as food relief and, to some extent, health and water facilities (i.e. issues pertaining to the internal human environment) Thus only immediate survival requirements were met and, to a certain extent, action was taken to avert the mass spread of infectious diseases (often with limited success).
Not much attention in general has been given to assessing or addressing the impact of mass displacement on the host environment and the consequences on both the displaced peoples and the receiving communities. It has now become evident that the mass displacement of peoples (especially those lasting over a sustained period) is not only associated with the provision of life-line support to the displaced community but also with aspects such as the tensions created with the indigenous (or receiving) population, and the pressures on local environment. Infrastructures, including health, are coming to be seen as areas for urgent action.

Questions have been raised as to why the environmental degradation caused by mass displacement of peoples is not given high priority in the emergency packages developed by international organisations. Karen Jacobsen (1994; pp.2-3) uses three arguments explains this neglect:

- the international organisations responsible for refugees so far have no comprehensive long-term environmental policy regarding emergency relief and rehabilitation;
- the views and experience of both local peoples and refugees concerning environmental degradation are neglected in the design of remedial programmes. A possible result of this is that most have not shown signs of compelling success;
- both in the analysis of, and policy for, resource problems, refugees are treated separately from the local community. Refugees receive assistance mainly in camps where, because they live apart from the host community, they are not incorporated into local resource control institutions.

Although Jacobsen argues these three points in terms of failure of environmental projects among refugees, they are certainly relevant to displaced peoples in general (i.e. refugees or the internally displaced). However, international law constraints related to the use of national resources by non-nationals have certainly posed more problems for the refugees than for internally displaced persons. It is also obvious that internally displaced persons are not protected under international laws dealing with refugees and therefore they mostly find themselves in the main neglected by international agencies and organisations.

One of major criticism's by Jacobsen in her report is that "...claims of environmental degradation caused by refugees have often been exaggerated for political purposes" (p.3). The political interest in this exaggeration is a disinclination to accept refugees due to the enormous damage they may inflict on the host environment. This indicates that the evidence collected for the report is weak, unreliable and incomplete. It is inconceivable that the mass movement of peoples (displaced or otherwise) and their settlement in fragile arid and semi-arid environments would have no impact on the environment.

The evidence available suggests that such claims of damage are not politically motivated and that environmental degradation has indeed occurred as a result of the mass displacement of people in fragile and moderate climates alike. The admission of the fact that mass displacement in marginal land use and drought prone areas does aggravate environmental degradation does not discredit refugees and displaced peoples or deny them the right to refuge. On the contrary, since the environment is the source of sustenance in these land-based economies, the call for better environmental management is mainly intended to offer better environmental quality for both the host and the displaced peoples. This paper attempts to outline the environmental problems caused by refugees and some policy recommendations as to how to minimise if not to eliminate them.

2. Environmental Impact of Displaced Peoples

The environmental impact of mass displacement can be divided into two major categories.

1) impact on the immediate human environment; such as food shortages, starvation and malnutrition; inadequate water supply and sanitation, health hazards and epidemics - including human and non-human waste disposal
2) impact on the physical environment, emanating from land degradation, including soil erosion, deforestation, loss of biodiversity, encroachment into game parks and forest reserves and mines.

Although the two categories of environmental impact of mass displacement are interrelated, it is necessary both for the sake of clarity, and order to identify immediate and long-term impacts, for them to be introduced separately, although it is not always rational to do so.

The first category of environmental impact is obviously associated with the emergency phase. It should be noted that some environmental hazards have a universal impact and others have differential or particular impact on specific categories of displaced peoples according to age, sex, economic background etc.

3. Impacts on the Immediate Camp and Human Environment

3.1. Food shortage, starvation and malnutrition

Scenes of starving displaced peoples and refugees have haunted the human conscience for centuries. For example, during the 1980s droughts in Africa, starvation, dehydration and infectious disease combined were directly linked to hundreds of thousands of deaths. It is estimated by CRED that approximately half a million Africans died between 1974 and 1980 from causes linked to drought, such as malnutrition. The number of displaced people who died for the same reasons between 1980 and 1990 is reported to be two or three times as high Apart from the tragedy of the massive numbers of dead, the management of corpses, as witnessed in the recent Rwandan crises and reported in Ethiopia (1984 - 89) also poses environmental hazards.

3.2. Inadequate water and sanitation

Displaced peoples often move either to another state (refugees) or to camps in rural areas or squatter settlements within their own states (internally displaced). In either case, sanitation becomes a major problem. Sanitation facilities such as pit latrines or rubbish pits are rarely provided in most refugee camps In addition, vector control and spraying of larvicidal agents to control insect vectors often takes place months after arrival in the camps. Malaria as well as meningitis epidemics are directly related to the environmental controls and sanitation conditions of camp areas. Another example of the consequence of neglecting environmental factors was the cholera epidemic in Mogadishu (1994). Drainage systems had broken down and water supplies were inadequate and polluted. Addressing these needs was not considered an emergency measure and thus they were neglected. The cholera epidemic in this case, as well as the more recent one in Rwanda, essentially expresses the lack of attention to environmental factors in relief actions.

Water shortages are common problems even for large population concentrations and urban areas in most of the developing world It is often most acute in rural areas and squatter settlements. In Africa most Sahelian urban centres suffer from water shortages during the dry season and waterborne diseases during the rainy season

Jacobsen (1994; p.7) mentions that, *"increased usage of pressure on water sources such as dug wells (bore-holes), springs and streams can lead to their drying up or pollution. Piped water and pump wells in refugee areas create erosion and drainage problems. Where refugee populations concentrate geographically and become dependent on these water points, dry seasons bring increased stress and low water levels".*
Problems of shortage of and quality of water are commonplace in refugee camps and shanty towns where displaced peoples live. It is reported (Brons, Woleyosus, Tegegne and Mohamed Salih; 1993) that in Hartisheik (the largest Somali refugee camp in Eastern Hararghe, Ethiopia between 1988 and 1992):
"The refugees have exerted pressure on the natural resources as about 800,000 litres of water had to be drawn and transported from four bore-holes in Jigiga town. The water transported was an equivalent to 4 litres per person a day. As a result of this excessive extraction, the water table was lowered to the extent that it became almost impossible to drill bore-holes. Further more, the population of Jigiga town has suffered of an extended programme of extraction for the refugees. Any major break down in the transport system means that thousands would go without water for a whole day"

The implications of inadequate water supply and poor sanitation include:
- at the beginning of the rainy season some people begin to drink from water pools which are polluted with human and animal waste.
- polluted and stagnant water pools had triggered off a whole range of waterborne, water-

washed and water-based diseases, including bacterial, parasitic, diarrhoea diseases or water-borne diseases including malaria, schistosomiasis etc.
- Problems of domestic and personal hygiene which result in skin diseases as well as fleas, black-flies and others which transmit a number of diseases

3.3. Health hazards and epidemics

Rapid and unplanned concentration of population in limited areas creates many health hazards and, at times, aided the spread of epidemics and diseases. Human health and well-being is affected by undesirable changes in the main elements of the environment (air, water and food) and the hygiene of the habitat in which humans live Displaced population camps also suffer from nutritional and environmental diseases (as described earlier in relation to food shortages and water). A prevalence of meningitis and certain respiratory diseases indicates the increased risk of air borne transmission linked to density of population.
A good example of the lack of environmental measures in relief programmes that last for more than few weeks can be illustrated by the cholera epidemic in the Goma camp in 1994 (see Table 1)

Table 1: Cholera epidemic of Goma, 1994: Proof of action or inaction

Typical cholera epidemic	Figures for Goma
100% infection	1,000,000 infected
5% contract severe disease	50,000 cases
30-40% die if untreated	15-20,000 deaths
	Conclusion: 17,000 deaths
	Fatality in 34% of cases

Analysis of the data indicates that the evolution of the disease effectively followed its normal course, as though no action was taken. The risk of gastro-intestinal diseases, as well as malaria, in refugee camps when no preventive action is taken to ensure environmental health is extremely high, as is evidenced by many recent crisis. These examples underscore the urgent need for relief agencies to incorporate environmental guidelines as soon as they begin their action.

4. Impact on the Physical Environment

Environment, population, human settlement and quality of life are closely interlinked and they affect each other in many interrelated ways. Instances of environmental degradation processes as a result of the concentration of large numbers of displaced peoples and refugees include deforestation, soil erosion, encroachment in game parks and forest reserves and severe forms of land degradation such as desertification

4.1. Deforestation and encroachment in game parks

The contribution to deforestation by refugees and displacement has been widely reported in many countries, notably by Byarugaba (1989), Nnoli (1989), Mohamed Salih et al (1989), William (1990), Ahmed (1993) and Myers (1993) who have shown that the need for firewood for fuel, building material or for sale, has stripped large areas of tree cover. Brons et al (1993) reported in Eastern Hararghe, Ethiopia that:

"Deforestation has occurred around all the major refugee camps in Ethiopia. In Hartisheik, an area within an estimated radius of about 5-10 km has been affected by deforestation. About 40 trucks loaded with building material, firewood and charcoal are brought to refugee cap every day. There are now thriving firewood and charcoal markets attached to all refugee camps since almost all their fuel consumption is secured from the surrounding forests and bushes".

Similar problems have been encountered in Malawi, Tanzania, Mali, Niger and Mauritania. Encroachment in game parks and forest reserves has been reported by Ahmed (1993) and Woldegeorgis (1993). Ahmed reported that, in South Sudan:
"With regard to the position of wildlife in the war zone as in Boma Plateau (a game and a forest reserve) the fighting parties have been indiscriminate in shooting animals, due to the need for food and some times commercial purposes. This has contributed to almost the destruction of this resource and a complete disappearance of some rare species"

It is also reported by Mohamed Salih et al (1989) that some displaced peoples were depending on game for food. Woldegeorgis reports that, in Eritrea,
"The prolonged internal displacement of hundreds of thousands of people, which necessitated the construction of new shelters to accommodate them in the liberated and base areas. The concomitant clearing for new farm lands and the additional needs for firewood and charcoal aggravated the process of deforestation".
The occurrence of deforestation and encroachment in game parks and forest reserves is not unique to Sahelian refugees and must have been taking place in other parts of the world. Population concentration, the availability of fire-arms and clearance of forests for cultivation must have all gone hand in hand.

4.2. Land degradation in areas around large displaced peoples and refugee camps

This has many different manifestations such as desertification (as in the Sudan, Mali, Mauritania and Northern Uganda). It can also lead to soil erosion, as the result of the loss of deforestation and the loss of tree cover. Land degradation at a massive scale has been reported in Pakistan as a result of the large-scale influx of Afghan refugees (Allan 1987). Examples from Tanzania (Nindi (1988), Somalia (William 1990), Ethiopia (Brons et al 1993) and Sudan (Mohamed Salih 1995) suggest that land degradation as a result of large concentration of populations is also rampant. The impact of land degradation on land-based economies means the deterioration of their main sources of income and sustenance.

4.3. Loss of biodiversity

Although the evidence is still anecdotal, there are logical claims which link the encroachment of refugees and displaced peoples into forest reserves with the loss of biodiversity. This could be true in the case of, for instance, Guatemalans who returned from refuge in Mexico and settled in the rain-forest. It could also be true of rain-forest dwellers who have been displaced by international organisations for mineral prospecting or large scale mechanised plantations.

It is important to recognise here that the negative impact that environmental degradation has on refugees and,in particular, women who have to go longer distances to collect firewood. There is also the problem of pastoralists losing valuable browsing trees to the firewood trades and to the displaced and to refugees as fuel. Finally, environmental factors linked to displacement can become a serious source of local impoverishment and tensions with the incoming population. For example, the destruction in the Sahel of acacia Senegal (the source of gum Arabic) represents a serious loss of income for the surrounding villages. Loss of income can also occur, indirectly, as a result of the loss of tree cover accelerating water run-off and exposing soil to erosion by water and wind.

Thus, environmental factors can also engender far-reaching consequences for the economic survival and well-being of the host and displaced population as well as political implications of struggle for resources.

5. Environmental Impact Assessment Techniques

Environmental Impact Assessment (EIA) is an important environmental policy instrument which depends on research and analysis to identify and predict the impact of human intervention on the biophysical environment, human health, socio-economic conditions and general well-being. It also provides a useful tool to interpret and communicate information about environmental effects. The results of the assessment provide a rational basis for new policy proposals or operational procedures to improve environmental conditions and minimise socio-economic consequences.

The uses of EIA include the assessment of human impact on valued ecosystems components (VECs) and their importance to various users as well as the impact of any proposed actions both on the environment and the populations concerned. The second most common use of EIA is the identification of cumulative impacts (CI) and environmental risk assessment (ERA). Information obtained for ERA has often proved to be useful in detecting long-term (or cumulative) impact on the environment of human intervention

In the particular case of evaluating the environmental impact of refugees and displaced persons, EIA should be closely linked with social impact assessment (SIA) i.e. the impact of human intervention in a given environment on the quality of life, employment, socio-economic well-being and cultural values of both the displaced and the host communities. Furthermore, Early Warning System (EWS) techniques and findings are potentially helpful in environmental risk assessment (ERA)

Three aspects of EWS are relevant to environmental impact assessment.
- risk assessment, detection, evaluation and prediction of potential environmental hazards;
- the construction of a forecast or a warning message; and
- the spreading of the warning message (Walker 1989).

The idea is that the information collected by EWS can provide useful background information for disaster preparedness and include short-term findings of EIA. However, as experienced in the numerous drought and conflict related famines in Sahel Africa, it is one thing to collect information and spread warning messages, it is another thing altogether to put to action the policy recommendations suggested by this technique. Ready-made action plans to react to a warning are essential if the warning is to serve a purpose.

Furthermore, the urgency with which issues of mass displacement have to be attended requires that Rapid Rural Appraisal (RRA) techniques could be used in the initial period of mass displacement. By RRA we refer to a non-conventional, inexpensive research method which could capture the changing socio-economic and environmental circumstances in a short period of time. This research method is not a substitute to conventional long-term research. It is meant to assist policy makers who are confronted with the problem of how to take preliminary decisions or formulate an opinion before a decision is taken. The findings may be useful for the identification of areas for further long-term research or possible intervention.

The challenge here is to develop a comprehensive yet rapid field instrument that will identify, collect and analyse accurate, effective and relevant information, taking into account that there are trade-offs between the quality of the data collected and the cost incurred. An additional risk in rapid assessments is related to its cost effectiveness. Inquiries are carried out in haste which can affect the creditability of the results obtained. However, this could be minimised by using highly qualified and researchers familiar with the region.

Finally a major constraint to applying these techniques in the case of refugees and displaced peoples is their sudden and unpredictable response to climatic and political changes in the regional and political contexts which prompted their flight in the first place. Refugees and displaced peoples are found to be very suspicious of questionnaires and researchers asking detailed questions about their socio-economic background. Problems of access to refugees and displaced peoples may exist in the initial period when such information is most-needed for policy formulation.

While each situation is case-specific, there are some common problems that require urgent attention when using these techniques of data collection for rapid appraisal. Even though the following list is not exhaustive, it highlights some of the issues that have emerged in most mass displacement situations.
At the internal and immediate environment level these include the need to.

- develop a systematic methodology for regular assessment of health, nutritional and community health parameters and their impacts on the displaced and refugee populations.
- identify ways and means to strengthen and improve present emergency programmes, with regard to food and health facilities, and to create community participatory approaches to primary environmental health care.
- identify the situation of water availability, quality and quantity as well as its immediate and long-term impact on the health and sanitation conditions of the refugees and displaced peoples.
- assess the existing types of shelter construction and fuel consumption and their impact on specific ecosystems, particularly forests and watersheds.

At the physical environment level, these include the need to:

- establish a profile of the physical environment, including soil, water, flora, fauna, climate and rainfall. The capacity and nature of these physical characteristics is essential in understanding how the physical environment will react to sudden mass interventions by displaced peoples;
- delineate the resilience and vulnerability of various ecosystems to mass displacement of populations in the short and long-term;
- analyse the interaction between human and physical resources, including the use and management of natural resources;
- assess potential impact on the human and physical environment and determine the potential socio-economic benefits and costs which may result from the mass settlement of displaced populations in a given environment;
- understand and encourage displaced peoples' and local communities' participation in environmental quality management.

These points cannot satisfy the requirements of a comprehensive policy formulation exercise and strategic measures.

Mundane and straightforward the above points may be, their implementation requires sound analysis, an interdisciplinary approach and the will to make them a permanent feature of emergency situations, in order to safeguard the environment in which refugees and displaced people find themselves. Such improvements could reduce tensions with the host communities and create situations where the host communities see the refugees and displaced persons as contributors to the improvement of the quality of their environment and not as outsiders who come to ruin their environment. If such a vision could be translated into strategic or operational guidelines, it would contribute to the improvement, inter-dependence and integration of the displaced into the host communities, and improve the socio-economic and environmental conditions of both communities.

6. Policy Perspectives on Environmental Management of Displaced Populations

The overall objective of introducing environmental impact assessment and other methods of inquiry into areas occupied by refugees and internally displaced peoples is to regulate, and thereby control, the negative impacts of their interventions on the environment. It is also a measure that allows a response to potential and unforeseen environmental effects with the aim of regaining the productive and assimilative capacity of the environment. All these together should lead to the sustainability and hence the conservation of the human and physical environments. Seven policy perspectives which could be elaborated include:

1. Socio-economic incentives versus command and control
   A people-based approach is required which employs the knowledge of the displaced along with the host communities regarding their environment. This approach should also focus on facilitating their own role in developing an adaptive environmental management system suitable to their needs and fitting their ways and customs. In view of the fact that some progress has been achieved in terms of socio-economic incentives (food-for-work) and energy saving technologies (stoves) for stable communities in developing countries, these methods could be adapted for situations of crises and displacement where environmental risks are high.

2. An integrated, inter-sectoral approach to encourage co-operation rather than competition
   The lack of co-ordination between different agencies working among refugees, admittedly inevitable to an extent, can nevertheless be minimised with better policies and clearer objectives. Although sharing of information by agencies can be successfully implemented (e.g. Office for Emergency Operations in Africa, OEOA, 1988), it is often difficult for them to integrate their activities on the ground. The result is sometimes competition between, for instance, different NGOs and multilateral organisations responding to their national constituencies or finance-base The lack of any clear policies regarding environmental management in camps evidently does not make integration or co-ordination any easier.

3. Conservation for the improvement of the quality of socio-economic conditions as well as environmental quality
   This is particularly so in the case of refugees, and sometimes internally displaced peoples, who are discriminated against in issues related to land rights, natural resource use and management. It is evident that problems of access and security of tenure are closely linked with peoples interest and motivation to use the sustainable natural resources available to them.

4. Institutional and capacity-building for environmental, risk and social assessment
   The need for post-intervention environmental monitoring and evaluation requires capacity-building at the local level to undertake such responsibilities as regular activities. Local environmental management actors include local governments, non-governmental organisations, women and youth groups, grassroots and citizen organisations and religious and opinion leaders This also necessitates the need for voluntary agreements and joint management of the environment.

5. Planned and voluntary dispersion versus concentration in large camps
   If pressures on the human and physical environments endanger the health and lives of the displaced and the host communities, one possible solution could be the voluntary and planned dispersal of refugees into smaller units. This would:

i) reduce the pressure on the environment by spreading the environmental impact, hence reducing its intensity, and
ii) create a more manageable population size.

However, while economic cost-benefit analysis may defy the logic of the economies of scale, it is possible that refugees may prefer to stick together in larger numbers in order to be able to defend themselves against potential enemies. Another problem with this solution would be that the international community often responds faster and with greater logistical ease to the needs of a hundred thousand in one place than a few hundred scattered in groups over a wide area.

6. Development of energy saving technologies and their inclusion in standard emergency relief kits
This policy suggestion is aimed at reducing or at any rate, regulating dependence on renewable energy sources such as forests or brushwood. It clearly requires specific policy parameters aimed at improving on some of the technologies which have been devised by specialised NGOs and multilateral organisations, such as energy-saving stoves, bio-gas cookers etc. and adapting them for emergency or camp use. This policy parameter requires the evaluation of the existing energy-saving technologies and the possibility of their modification and use in different regional contexts.

7. Development of clear policy guidelines within the confines of multilateral and bilateral agencies working with refugees and displaced peoples
Action in the field for containment of environmental damage and the control of potential conflicts related to resource use between displaced and host populations is hardly possible without clear and specific policy directives at donor level. Emergency relief is largely financed by international and bi-lateral agencies and the responsibility for clarifying concepts and priorities, in this case, rests with them. Only on the basis of such policy directives, can field agencies develop operational strategies and technical guidelines. Along with the specific concerns mentioned in this paper, it is critical that such policy should be mindful of the importance of socio-economic and cultural factors, particularly for environmental matters and the importance of including both host and displaced communities within the policy framework. Such an approach, in our view, would go a long way towards ensuring successful implementation.

7. Conclusion

The above summary of policy perspectives is by no means exhaustive. None of the issues raised are as simple to tackle as presented. Three main overall characteristics define the environmental situation of a displaced community ·

i) refugees and displaced peoples live in an environment imposed on them by internal or external circumstances.
ii) their environmental problems are frequently worse than those of poor urban and rural dwellers because of their limited access to alternative sources of livelihood and incomes. As a consequence of their dependence on camp structures, the limited possibility of mobility and security conditions, they are both victims and perpetrators of environmental degradation.
iii) the perspectives presented above, while referring to immediate and emergency conditions, also meet the requirements of sustainable development. Their emphasis is on meeting the needs of an emergency situation without compromising the potential for future generations to meet their own needs. They also account for the limitations imposed by the state of technology and social organisation on the environment.

The survival of displaced communities depends on a delicate balance between emergency programmes and relief food provided by the international community and the resources of receiving states and host communities. In most cases, the displaced themselves have little or no resources of their own to be used for the improvement of their human and physical environments. Given appropriate policy interventions, relief and rehabilitation programmes could facilitate the integration of the interests and objectives of the two communities so that they could work together

to improve on their socio-economic and environmental conditions. The fact that the displaced may destroy their host environment does not make them any different from any concentration of stable population who are compelled by circumstances to degrade their environment. The difference is that the displaced peoples are in a fragile, volatile and insecure situation where their entitlements and rights are negligible.

It is time that the international community wakes up to the fact that by not clarifying the fundamental understanding of the issues and dynamics surrounding the cause and effects of displacement and therefore neglecting critical aspects such as environmental factors, it ends up aggravating strife or even creating the basis for it. Experience over the last two decades has been more than sufficient to show that it is necessary to re-think and reform approaches to relief and rehabilitation of displaced populations. The days of "fire-fighting" action transporting bandages, tents and blankets to the emergency site as the sum total of the response are gone.