Environmental Refugees[1]

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There are fast-growing numbers of people who can no longer gain a secure livelihood in their homelands because of drought, soil erosion, desertification, deforestation and other environmental problems. In their desperation, these "environmental refugees"—as they are increasingly coming to be known and as they are termed in this paper—feel they have no alternative but to seek sanctuary elsewhere, however hazardous the attempt. Not all of them have fled their countries, many being internally displaced. But all have abandoned their homelands on a semi-permanent if not permanent basis, having little hope of a foreseeable return.

THE POSITION TODAY

There are at least 25 million environmental refugees today, a total to be compared with 22 million refugees of traditional kind. They are mainly located in Sub-Saharan Africa (notably the Sahel and the Horn), the Indian sub-continent, China, Mexico and Central America. The total may well double by the year 2010 if not before, as increasing numbers of impoverished people press ever harder on over-loaded environments. Their numbers seem likely to grow still more rapidly if predictions of global warming are borne out, whereupon sea-level rise and flooding of many coastal communities, plus agricultural dislocations through droughts and disruption of

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monsoon and other rainfall systems, could eventually cause as many as 200 million people to be put at risk of displacement.[2]

These estimates constitute no more, and no less, than a first-cut assessment. They are advanced with the sole purpose of enabling us to "get a handle," however preliminary and exploratory, on an emergent problem of exceptional significance. Moreover, the estimates are cautious and conservative. Note that, for instance, there are already 135 million people threatened by severe desertification, and 550 million people subject to chronic water shortages. While certain of these people will have been included in the 25 million figure, many could well have been driven to migrate without being counted as environmental refugees.

A still larger pool of potential environmental refugees lies with the phenomenon of marginal people driven into marginal environments. They have been by-passed by development processes: for reasons political, economic, social, cultural, legal and institutional, they have been "marginalized." They comprise around 900 million of the 1.3 billion people who endure absolute poverty with an average cash income of $1 or less per day. Of the 900 million, over 70% live in agricultural areas of very low potential: and of these, 57% try to survive in areas ecologically vulnerable to undue soil erosion, droughts, desertification, floods and other environmental hazards. A proportion of them are over-loading the environmentally fragile areas.

The plight of these destitutes drives them to seek a livelihood wherever they can, often in marginal environments, or environments that are too wet, too dry or too steep for sustainable agriculture of conventional kind. Hence these people account for much deforestation, desertification and soil erosion, and they aggravate the environmental decline caused by other factors. It is estimated that in Africa, 51% of the poorest people occupy marginal lands; in Asia, 60%; and in Latin America, 80%. Of the one billion additional people projected to be added to the global population during the 1990s, the majority are expected to be among impoverished communities, precisely the ones who are likely to migrate into marginal environments. In Sub-Saharan Africa, these environments may need to support an extra 225 million people, and in India an extra 190 million during the 1990s.

The current total of 25 million environmental refugees amounts to one person in 225 worldwide. If a similar proportion were applied to Britain, it would amount to one quarter of a million people, and in the United States, 1.2 million.

As indicated, there are additional problems closely associated with the environmental factors displacing people. They include population pres-

sures and poverty, also malnutrition, landlessness, over-rapid urbanization, unemployment. pandemic diseases and government shortcomings, together with ethnic strife and conventional conflicts, also exogenous problems such as foreign debt. On top of all this is the lack of official recognition, whether on the part of governments or international agencies, that there is an environmental refugee problem at all.

FUTURE OUTLOOK OF THE PROBLEM

How many environmental refugees can we realistically anticipate in the future—or rather, how many people are likely to become vulnerable to environmental problems causing them to migrate? Let us consider two time horizons, the years 2010 and 2025.

A. The Year 2010

Food and Agriculture

If the 1985-onwards "plateauing" of crop yields continues, there will be more and more widespread shortfalls in food production, while international tradeable surpluses will become increasingly unable to make up the deficits. In particular:

- Sub-Saharan Africa's food output per head, already inadequate, is expected to decline by a further 20%. The region's total of malnourished people could well surpass 300 million, and by simple extrapolation (not allowing for non-linear increases) there could be some 100 million destitutes obliged to live for the most part off relief food among other forms of international aid.
- The monsoon system in the Indian subcontinent may start to feature deep-seated changes, which is critical insofar as India depends upon the stable functioning of the monsoon for 70% of its rainfall. Also in India, just a 0.5 degree C. rise in temperature could reduce the wheat crop by 10%. This could be critical in a country with a projected total of 1,190 million people in 2010, 254 million (27%) more than today.

Water Shortages

The populations of water-short countries today, 550 million, are expected to increase to one billion. Water shortages will be specially adverse for agriculture in general and irrigation agriculture in particular; and for

household needs, notably in large urban communities, with all that implies for water-related diseases. In the northern sector of China, with more than half a billion people and producing one quarter of the country's food, virtually all water stocks were already being exploited in 1990, and the agricultural consequences by 2010 could be pronounced indeed.

Deforestation

If recent trends persist, especially as concerns the mounting numbers of slash-and-burn cultivators in the form of displaced peasants, tropical forests will likely lose another 40 to 50% of their already depleted expanse. At the same time, well over half of all developing-world people, almost three billion, could be gaining their fuelwood supplies only by over-cutting stocks; of these, 500 million could be experiencing absolute shortages.

Desertification

There are no predictions for how many more people will possibly or probably be affected by desertification in 2010. But there are few signs that the overall process is abating much, let alone declining or even reversing (notwithstanding some recoveries in certain areas). The nature of desertification processes is subject to much controversy; indeed there is no consensus about just what desertification amounts to. Nonetheless it is widely accepted that populations in countries principally in question are projected to expand by at least one third by 2010, and the 135 million people affected by severe desertification in 1990 could well increase to as many as 180 million. While this is a crude calculation, it is rigorously cautious as well.

Population

The population of today's developing countries is projected to have grown by 1.3 billion people, a 28% increase in just 15 years, and comprising 83% of the global total of 7.0 billion. In particular:

- Sub-Saharan Africa's total will have expanded by some 300 million, a 51% increase; the Horn of Africa's by 50 million, 52%; and Nigeria's by 56 million, 50%.
- The Indian sub-continent's by 367 million, 31%.
- China's by 167 million, 14%.
- Egypt's by 18 million, 29%; and the rest of North Africa's by 23 million, 33%.
- Mexico's by 24 million, 26%.

Urbanization and Mega-Cities

Between 1991 and 2010, one billion rural people are expected to migrate to mega-cities in developing countries. In particular:

- Mexico City, Lagos, Bombay and Shanghai are likely to top 20 million people, and 21 cities to have reached 10 million or more.
- China's urban population is expected to almost double to a total of more than 600 million. This will engender greatly increased demand for water for household use, to the detriment of the country's agriculture which currently takes 87% of all water consumed in order to maintain food production.

Unemployment

The developing countries' workforce is projected to increase to 2.7 billion. There will have been a need to create 40 million jobs every year from 1994 onwards in order to merely hold the line on unemployment (not counting underemployment). The growing total of workless people will swell the numbers of marginal people, driving more to seek a livelihood in marginal lands.

Poverty

The numbers of people in absolute poverty are predicted to swell from 1.3 billion in 1995 to as many as 1.8 billion in 2010 even though there will be a decline in the proportion. Again, this means there will surely be a marked rise in the numbers of marginal people moving into marginal environments.

Extreme Weather Events

If recent trends persist, there will be an increase in freak weather phenomena such as exceptional cyclones, storms and hot spells, plus shifts in the El Nino Southern Oscillation, bringing on record floods and droughts.

The 25 million environmental refugees in 1995 have mostly become obliged to migrate since roughly 1980, when their numbers first started to climb rapidly. In light of patterns and trends of environmental decline and of associated problems such as population increase, it is probable that by 2010, i.e., within another 15 years, there will be at least another 25 million such refugees if only because the impelling factors will continue to be at least as prominent as during the past 15 years. (This supposes too that there will be few preventive measures of sufficient scope.) In fact, the total could well be a good deal larger than 25 million because of increasingly

degraded environments coupled with growing numbers of people in absolute poverty.

B. The Year 2025

Food and Agriculture

There will be a growing squeeze on grainlands. Ten large-populace countries, all relevant to this report, will have between 0.07 and 0.02 of a grainland hectare per person, to be compared with India's 0.12 of a hectare in 1990. Their collective populations are projected to have surpassed four billion. (In addition, irrigated lands may have lost as much as 25% of their expanse to salinization, water logging and water shortages among other problems.) Nine of these ten countries are expected to need 330 million tons of imported grain per year, out of a global total of 500 million tons, thus putting exceptional pressure on an ever-tightening grain market worldwide.

Water Shortages

People in chronically water-short countries are expected to total three billion, a 10-fold increase over 1990. Among countries joining the list will be six countries relevant to this report, with collective populations totalling 620 million. If we include sectors of countries which will similarly be water short, notably northern China, parts of Pakistan and India, and northern/central Mexico, the total could readily surpass one billion.

Deforestation

If patterns and trends of deforestation persist, it is hard to see that much tropical forest will remain. Deforestation will lead to widespread degradation of watershed systems, disruption of rainfall regimes, an increase in the albedo effect (disrupting wind patterns and convection currents), and a sharp increase in greenhouse gas emissions as well as loss of the forests' carbon-sink function.

Desertification

The projected 180 million people affected by severe desertification in 2010 could have increased in line with population growth to around 225 million. As with the 2010 assessment, this calculation is cautious and conservative.

Population

The population of today's developing countries is projected to have risen by 2.5 billion over the 1995 total, a 55% increase in just 30 years, and comprising 85% of the global total of 8.3 billion. In particular:

- Sub-Saharan Africa's total will have expanded by 691 million, a 116% increase; the Horn of Africa's by 118 million, 123%; and Nigeria's by 126 million, 113%.
- The Indian sub-continent's by 677 million, 57%.
- China's by 305 million, 25%.
- Egypt's by 34 million, 54%; and the rest of North Africa's by 43 million, 62%.
- Mexico's by 43 million, 46%.
- Coastal zones may feature as many as five billion people, or two-thirds of all people in the world, making them specially susceptible to sea-level rise and associated problems such as cyclones, sea-storm surges and tidal waves.

Urbanization and Mega-Cities

The urban total of developing countries is expected to reach four billion people. In the wake of a 2.4-times increase in the total since 1995, much urban infrastructure may be increasingly unable to cope, with systems breakdown becoming widespread.

Poverty

Although no predictions or forecasts are available, absolute poverty is likely to remain widespread and perhaps increase in parts of the Indian subcontinent and much of Sub-Saharan Africa, with all that means for marginal people driven into marginal environments. In Sub-Saharan Africa, per-capita GNP may not have risen above $500, only 43% higher than the 1990 level, by contrast with a 2.5 times advance expected in much of Latin America and a four-fold advance in much of Asia.

Global Warming

Supposing that modelling predictions for climate change are borne out, there will surely be many emergent manifestations of global warming by 2025, especially if, as expected, there is an average temperature rise worldwide of almost 1 degree C. (though some areas, especially in temperate zones such as northwestern Europe, could become cooler—uncer-

tainty abounds). These manifestations could well include an intensification of rainfall regimes in the tropics and subtropics, and of both the cyclone and monsoon systems; also an increased incidence of severe and protracted droughts. There could be additional problems from still further shifts in the El Nino Southern Oscillation, bringing on record floods and droughts. Monsoon patterns are specially susceptible: they could be affected by a temperature rise of only 1 degree C. to an extent that would dwarf the direct drought effects of such a temperature rise.

THE ILLUSTRATIVE CASE OF SUB-SAHARAN AFRICA

For a specific instance of the problem's scope to expand, consider the prospect for Sub-Saharan Africa until the year 2010. This is all the more significant in that the region already features half of all refugees. Despite some advances in soil conservation (Kenya, Ethiopia), smallscale agriculture (Nigeria, Zimbabwe), reforestation (Tanzania, Malawi), anti-desertification (South Africa), and population planning (Kenya, Zimbabwe, Botswana), the outlook is unpromising. The region's population is projected to increase to almost 900 million people, 51% more than in 1995. Unless there are greatly expanded efforts to confront the region's lack of development, it is expected that average cash incomes will be little higher in real terms than in 1970.

Severe desertification may well affect more than 100 million people, half as many again as today. There are likely to be ten countries experiencing chronic water shortages or even acute water scarcity, with collective populations totalling well over 400 million people. Per-capita cropland in six countries with a projected collective population of 350 million is likely to have fallen to an average of 0.5 of a hectare or less, or only half as much as in the Indian sub-continent today. Per-capita food production is expected to decline even below the meagre 1990 level, possibly as much as 20% below. As noted, the total of malnourished people could grow to 300 million, with 100 million destitutes obliged to live for the most part off relief food among other forms of international aid. The region's food deficit may rise as high as 100 million tons, and because of its exceptional poverty the region may be unable to compete in the global grain market with rising prices for supplies in ever-greater demand. Total food aid in 1994 was only 14 million tons worldwide.

Certain of these problems in Sub-Saharan Africa could be exacerbated by their interactions. For instance, conventional conflicts, especially civil wars, not only disrupt agriculture and other vital development sectors.

Government expenditures on military activities draw away funds that could otherwise be spent on development. Freak weather phenomena stemming from e.g., increased oscillations in the El Nino system or the onset of global warming could markedly increase droughts among other climate dislocations. Malnutrition and diseases often aggravate poverty, and vice versa. Certain of these interactions exert a compounded impact, i.e., one problem plus another problem does not make for a double problem but a super problem. There could also be discontinuities, though of constructive sort, in the policy arena. Were the region to double its rate of annual increase in grain production and to halve its rate of population growth by 2020, it could become self-sufficient in food.

THE IMPACT OF GLOBAL WARMING

Due largely to sea-level rise and flooding of coastal-zone communities, but also as a result of increased droughts and disruptions of rainfall regimes such as monsoonal systems, global warming could put large numbers of people at risk of displacement by the middle of next century if not before. Preliminary estimates indicate that the total of people at risk of sea-level rise in Bangladesh could be 26 million, in Egypt 12 million, in China 73 million, in India 20 million, and elsewhere 31 million, making an aggregate total of 162 million. At the same time, at least 50 million people could be at risk through increased droughts and other climate dislocations.

POLICY RESPONSES: BACKGROUND

The issue of environmental refugees is fast becoming prominent in the global arena. Indeed it promises to rank as one of the foremost human crises of our times. To date, however, it has been viewed as a peripheral concern, a kind of aberration from the normal order of things. At the same time, it is an outward manifestation of profound change, a manifestation often marked by extreme deprivation, fear and despair. While it derives from environmental problems, it is equally a crisis of social, political and economic sorts. As such, it could readily become a cause of turmoil and confrontation, leading to conflict and violence. Yet even as the problem becomes more pressing, our policy responses fall further short of measuring up to the challenge. Environmental refugees are still to be officially recognized as a problem at all.

In addition, there are limits to host countries' capacity, let alone will-

ingness, to take in outsiders. As a result, immigrant aliens present abundant scope for popular resentment, however unjust this reaction. In the wake of perceived threats to social cohesion and national identity, refugees can become an excuse for outbreaks of ethnic tension and civil disorder, even political upheaval. Already migrant aliens prove unwelcome in certain host countries, as witness the cases of Haitians in the United States and North Africans in Europe. No fewer than nine developed countries, almost one in three, are taking steps to further restrict immigration flows from developing countries.

Yet measures to relieve the plight of refugees of whatever kind have drastically diminished in relation to the growing scale of the problem. Although the annual budget of the United Nations High Commissioner for Refugees has recently been increased to $1 billion, the agency is increasingly unable to meet the present demand for food and shelter to support refugees of traditional kind alone, much less to invest in repatriation or rehabilitation of these refugees. Meantime the world's refugee burden is carried overwhelmingly by the poorest sectors of the global community. In 1990 the twenty countries with the highest ratios of official (traditional) refugees had an annual per-capita income of only $700.

By far the best way to deal with the problem is to preempt it: to recognize it, to comprehend it, and to respond by tackling the sources of the problem rather than waiting and paying a higher price through reacting to symptoms of the same problem. The key to this difficult prospect is understanding—probably the resource in shortest supply right now. With a proper sense of what is at stake, there is still time for policy responses to ensure that migration—provided it is controlled, planned and orderly—can again become the positive force it has frequently been in the past.

POLICY RESPONSES: SPECIFIC OPTIONS

There is much scope for preventive responses, with the aim of reducing the motivation to migrate by ensuring an acceptable livelihood in established homelands.

An Expanded Approach

We need to expand our approach to refugees in general in order to encompass environmental refugees in particular. We cannot continue to ignore environmental refugees simply because there is no institutionalized mode of dealing with the problem. This question of official acceptance

could be handled as part of a major international conference on themes proposed at the Cairo Conference on Population and Development in September 1994.

Address Root Causes

We need to widen and deepen our understanding of environmental refugees by establishing the root causes of the problem. There are many conceptual grey areas as concerns proximate and ultimate causes, the roles of population pressures and poverty, the linkages to ethnic tensions and conventional conflict, and so lengthily forth. Without a clear grasp of what causes what, and how the diverse variables interact, we shall be less able to identify the principal source factors.

In addition, we need to do much more to document and analyse the fast unfolding phenomenon of environmental refugees. As a basic measure to grasp the nature and extent of the problem, and to facilitate a continuous monitoring effort, we should engage in planning strategies to (a) assess the problem in its entirety today, (b) predict how it will likely develop in the future, (c) determine response activities to cope with the problem as it already exists and will probably expand, and (d) evaluate the impact of environmental refugees on host communities.

Promote Sustainable Development

There can be little advance on any front except within an overall context of what has come to be known as sustainable development, defined by the World Commission on Environment and Development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." It applies particularly to ensured access to food, water, energy, health, work, housing and other basic human needs. In big-picture terms, it represents a sound way to preempt the environmental refugee issue in its full scope over the long run. As a prime mode to tackle the issue, then, it would prove a handsome-payoff investment to foster sustainable development in developing countries through greater policy emphasis on environmental safeguards, together with efforts to stem associated problems of population growth, poverty, landlessness, and basic human needs.

At the same time, only select parts of sustainable development measures will address the particular problem of environmental refugees. Specially pertinent, for example, is the Anti-Desertification Action Plan as applied to the Sahel and arid sectors of the Horn of Africa, both being sources

of large numbers of environmental refugees whether present or prospective. Also warranting closely targetted responses are food-short regions as in Sub-Saharan Africa and the Indian sub-continent. Several other "silver bullet" options are available, documented in the report.

Foreign Aid

There is a role for foreign aid insofar as it serves to relieve poverty among the communities most likely to generate environmental refugees. Foreign aid could also be more specifically targetted to tackle the underlying economic and political instabilities that likewise generate environmental refugees. That is to say, foreign aid could incorporate conditionality constraints to ensure that funds are directly assigned to the purpose in question here, viz., the alleviation of pressures that cause people to become environmental refugees.

In 1994 the United Nations spent more or less as much on refugees and related activities as on economic development. The budget of the United Nations Development Programme is little larger than that of the United Nations High Commissioner for Refugees. This means that the general response tends to be as reactive as proactive. Moreover, ten developing countries with well over two-thirds of the world's "poorest of the poor" receive only one third of foreign aid—and it is this community that serves as the source of most environmental refugees. Were parts of foreign aid budgets to be closely directed at impoverished people in the main countries and regions concerned, they could help to relieve the problem while it is still becoming a problem, i.e., before it becomes entrenched.

Equally to the point, developing countries and aid-donor countries alike devote only around 10% of their development expenditures to priority human needs such as basic nutrition, health, water and sanitation, primary education and family planning—the lack of which is often a contributory factor to the environmental refugee problem. The communities most deficient in these essentials are the 1.3 billion in absolute poverty. The challenge could be largely surmounted if the funding proportion were to be doubled, whereupon the task would be accomplished for $25 billion a year, of which only one third need come from developed countries.

Foreign Debt

Much could be done to reduce the debt burden on developing countries. They paid $1.4 trillion between 1982 and 1991 merely to service their debt, which meantime expanded by almost one half. Creditor nations

and institutions could, in consultation with governments concerned, address the debt relief needs of those developing countries that already generate large numbers of environmental refugees or appear likely to do so in the future. This measure depends of course on debt relief being closely and specifically linked to the issue in question through e.g., debt-for-environment swaps.

Specific Initiatives for Developing Countries

There is much more that developing countries themselves can do to confront the environmental refugees challenge, and at no great cost. To eliminate deaths from famine would cost little more than $0.5 billion per year; to cut malnutrition among women and children, less than $2 billion; and to reduce hunger among the poorest households, little over $6 billion. All of these measures would help to reduce the factors generating environmental refugees. The total cost would be less than $9 billion, or a mere $7 for each of the 1.3 billion people in absolute poverty—the communities that are a prime source of environmental refugees. By contrast, developing countries currently spend an annual average of some $40 per citizen on military activities. In 1991 Ethiopia assigned 13% of GDP to military activities, four times more than the global average, even while it featured some of the largest numbers of environmental refugees in proportion to its population.

Still greater options are available for developing countries. If they were to privatize public enterprises, correct distortive development policies (such as perverse subsidies), root out corruption, lower their military expenditures to 1970 levels, and generally improve national governance, they would readily release some $50 billion per year. For example, Zimbabwe has reduced food subsidies in order to promote smallholder agriculture, and it has actively and widely encouraged private investment, while it has also implemented a broadscale soil conservation program among other environment protection activities (plus an unusually successful family planning program). True, the proposal would prove merely idealistic in many instances. But it is advanced with the purpose of demonstrating the scope for developing countries to achieve all manner of advances that should be undertaken for their own sake while also assisting the problem of environmental refugees. That is to say, if even part of it were to be implemented in carefully targetted fashion, it could go far to safeguard the environmental basis of developing countries' economies and hence reduce the environmental factors that compel mass migration.

Developing countries could also mobilize substantial funds through a

reordering of priorities within their individual budget sectors. In the public health field, they could shift the budgetary emphasis from curative to preventative medicine, a measure that alone would take care of the basic health needs of all citizens. This would help to reduce the disease factors that contribute to the environmental refugees problem, in terms both of the migration-inducing pressures and the strongly adverse public health consequences of largescale displacements.

Policies with Multiplier Effects

A number of policy initiatives would generate multiplier effects of unusually constructive sort. An expanded tree-planting campaign in developing countries—today's effort is only one fifth of what is needed to keep up with tree cutting—would not only supply fuelwood and timber. It would yield additional benefits in the form of soil protection, windbreaks for field crops, restoration of watershed services and carbon sinks to counter global warming, while also serving to relieve exploitation pressure on remaining natural forests. Thus these benefits would generate a host of reinforced repercussions in the way of environmental safeguards and support for sustainable development in several leading economic sectors. They would be especially opportune in those countries that feature most environmental refugees. There is much additional scope to generate policies with compounded impacts.

Enhanced Management of the Problem

Finally, let us consider immediate and proximate responses, notably emergency relief and crisis containment. There is an increasingly dismal record on these fronts. Funds, staff, planning, in fact institutions as a whole are falling ever further behind in their efforts to keep up with the refugee challenge as concerns just traditional refugees. Environmental refugees do not even receive official recognition, never mind help and support.

The prospect ahead must be even less propitious in light of the upsurging numbers of environmental refugees. For a long time to come we shall need more and better stocks of relief food, refugee camps and other facilities as first-step measures; and in terms of longer-run measures we shall need to devise programs and plans to accommodate and resettle those refugees who will not be able to return home. The problem is little likely to be reduced for perhaps another decade because the processes that generate environmental refugees have worked up too much momentum to be slowed, let alone halted, in short order. Thus the principal policy response

here is to mobilize an extended effort to handle an adverse situation that is already strongly established.

CONCLUSION

The essential message is this: for all countries, whether developing or developed, the overriding objective must be to reduce the motivation for environmentally destitute people to migrate by supplying them with acceptable lifestyles. For developed countries in particular, the prospect will increasingly become a case of "export the wherewithall for sustainable development for communities at risk—or import growing numbers of environmental refugees."

Environmental refugees could become one of the foremost human crises of our times. Thus far they have been viewed as a peripheral concern, a kind of abberation from the normal order of things. In the world of the future, they are likely to become a prominent feature of our One Earth landscape. The phenomenon is an outward manifestation of profound change—a manifestation often marked by extreme deprivation, fear and despair. While it derives from environmental problems, it is equally a crisis of social, political and economic sorts: it can be viewed as an index of political stability, of justice and order. In short, it is a reflection of the inability of our institutional systems to reflect changes of deep-seated and even unique type. As such, the crisis could readily become a cause of turmoil and confrontation, leading to conflict and violence.

By far the best way to deal with the problem is to preempt it: to recognize it, to comprehend it, and to respond by tackling the sources of the problem rather than reacting to its symptoms. The key to this difficult prospect is understanding—probably the resource in shortest supply right now. Understanding will, it is hoped, be assisted through this report.

ENDNOTES

1. Adapted from White Paper prepared for the League of Women Voters Population Coalition.
2. These findings are based on an 18-month research project carried out in consultation with representatives of governments, intergovernmental bodies, United Nations agencies, the World Bank, and dozens of NGOs including refugee organizations, published as N. Myers with J. Kent, 1995, "Environmental Exodus: An Emergent Crisis in the Global Arena", Climate Institute, Washington DC. The findings also reflect a broad spectrum of expert opinion on the part of leading scientists and policy analysts in all major parts of the world. In particular, the research report draws heavily on the experience of field workers

with their extensive and first-hand knowledge. Further, the overall assessment is illustrated by six regional case studies with detailed documentation. All the individual findings and conclusions are supported by specific references, more than 1000 of which can be found in the main text.