





are related to the international power structure and institutional organization. According to this “structuralist” approach, the explanation for population movements lies in the deeper, underlying forces which structure the unequal distribution of opportunities between regions. Population movements, then, are a response to broader structural forces in society, in particular those associated with the uneven penetration of capitalism which has created substantial spatial inequalities.

The difference between neo-classical economic theories of population movements and the structuralist approach influences all aspects of any discussion regarding the issue. Not only do the theories offer opposing views of the causes of refugee movements, but they also imply very different outcomes. The neo-classical approach, arguing that population displacements are natural occurrences, suggests that they are positive events and that policy development should reflect and reinforce the beneficial aspects of these movements. The structuralist approach, however, emphasizes that population movements are a response to unnatural imbalances in power and opportunities. Consequently, the negative aspects of population displacements are a function of inequities in development, and policy should be developed to address these imbalances and attempt to stem what must be viewed as a consequence of the inequitable distribution of resources in society.

### **3. What role does the environment play as a contributor to population movement?**

#### *a) The Advocates*

Although there is growing awareness of, and interest in, the relationship between environmental change and population movement, the traditional literature on migration has largely ignored the connection. In their report to the Trilateral Commission (*International Migration: Challenges in a New Era*), Meissner et. al. (1993) never once mention environment or resources. Rogers (1992) in his discussion on migration presents four key indicators of “migration potential:”

- population growth;
- economic restructuring;
- increasing economic disparities; and
- increased refugee flows.

Again, environment is not mentioned. Other recent reviews on the causes of migration which fail to

include environmental degradation or resource depletion as factors include Appleyard, 1991; and Massey, et al, 1993). This stands in stark contrast to the statements in *The State of the World's Refugees* (UNHCR, 1993), which clearly identify environmental degradation as a root cause of population displacement, as mentioned above (it is worth noting, however, that the 1995 volume by UNHCR does not make a similar claim).

Countering the traditional perspective on migration is a growing literature which claims that traditional theories fail to recognize the true extent and complexity of migratory responses to environmental degradation (cf. Hall and Hanson, 1992; Kavanagh and Lonergan, 1992; Fornos, 1993; Stoett, 1993; Lee, 1996; Suhrke, 1992, 1996; Vlachos, 1996). Most attention has focused on the plight of “ecological refugees” or “environmental refugees” (El-Hinnawi, 1985; UNHCR, 1993). While the World Commission on Environment and Development (WCED) identified environmentally-induced population displacement as a “recent phenomenon” (WCED, 1987), there is little doubt that throughout history people have had to move from their land because it has become degraded through natural disasters, warfare or over-exploitation. Intuitively, it makes sense that environmental change may affect socio-economic conditions which, in turn, could lead to out-migration. Indeed, recurrent droughts and extreme flooding have uprooted millions of people, although whether environmental catastrophes were the root cause of such movement is unclear.

The concern that environmental degradation will produce “waves of refugees,” however, is more recent, based largely on the writings of El-Hinnawi (1985), Jacobson (1988) and Myers (1993; 1995). Suhrke (1992) labels this group the “maximalists.” Supporting their arguments is the fact that environmental disasters such as floods, droughts and earthquakes are displacing ever larger numbers of people, not necessarily because the severity of these events is becoming greater,<sup>2</sup> but because population density, especially in regions which are prone to disaster, is increasing rapidly. Land and resource scarcity elsewhere may also be a strong contributor to these increases in density in vulnerable areas.

Since its first official use in 1985 by El-Hinnawi in his United Nations Environment Programme (UNEP) report, the phrase “environmental refugee” has appeared with increasing frequency in the literature on



source depletion on population movement may be even more important than these authors suggest.

#### **4. What does “environment” mean in the context of migration?**

Part of the difficulty in determining what role the “environment” plays as a cause of, or contributor to, population movement is that authors interpret “environment” quite broadly, or keep it ill-defined. El-Hinnawi (1985), for example, notes three categories of “environmental refugees:”

- Those temporarily displaced because of an environmental stress such as an earthquake, or cyclone, and who will likely return to their original habitat;
- Those permanently displaced because of permanent changes to their habitat, such as dams or lakes; and
- Those who are permanently displaced desiring an improved quality of life because their original habitat can no longer provide for their basic needs.

In these three categories, El-Hinnawi has incorporated three very different groups of migrants. In the first case, there is a temporary movement from physical danger; the second category involves development projects where individuals are forced to resettle within a region (and there is a question how many “internal” refugees are generated by these processes); and the third reflects a voluntary movement based on the “push-pull” model noted above.

It is useful to categorize environmental stress, as follows (Lonergan, 1994):

- **Natural Disasters**  
Natural disasters include floods, volcanoes and earthquakes. They are usually characterized by a rapid onset, and their impact (destructiveness) is a function of the number of vulnerable people in the region rather than the severity of the disaster, per se. Poor people in developing countries are the most affected because they are the most vulnerable. (Droughts, despite a slower onset, are also included in this category.) Recent earthquakes in Pakistan and flooding in many regions of the world indicates not only the destructiveness of disasters, but their ability to displace large numbers of people.
- **Cumulative Changes or “Slow-Onset Changes”**  
Cumulative changes are generally natural processes occurring at a slower rate which interact with—and are advanced by—human activities. The processes include deforestation, land degradation, erosion, salinity, siltation, waterlogging, desertification and climate warming. Human-induced soil degradation is one factor

which directly affects economic sufficiency in rural areas. Water availability is another factor which may affect sustainable livelihoods. Do factors such as water scarcity and human-induced soil degradation in and of themselves cause population displacement? The linkage is much more indirect; in most cases, one or more of rapid population growth, economic decline, inequitable distribution of resources, lack of institutional support and political repression are also present.

- **Accidental Disruptions or Industrial Accidents**  
This category includes chemical manufacture and transport and nuclear reactor accidents. The two most obvious examples are the nuclear accident at Chernobyl, in the former USSR in 1986, and the Union Carbide accident in Bhopal, India, in 1987. Between 1986 and 1992, there were over 75 major chemical accidents which killed almost 4000 persons worldwide, injured another 62,000, and displaced over 2 million (UNEP, 1993). Most of these displacements, however, were temporary. In the case of the accident at Bhopal, despite the death of 2,800 people and illnesses to 200,000 more, there was virtually no mass movement of population out of the region.

- **Development Projects**  
Development projects which involve forced resettlement include dams and irrigation projects. In India, for example, it has been estimated that over 20 million persons have been uprooted by development projects in the past three decades (Fornos, 1992). The Three Gorges Dam project in China - expected to displace over 1 million persons - and the Sardar Sarovar Dam project in India are the most notable present examples. Rapid urbanization in some regions of the world is also forcing people from their land; conversion of agricultural land to urban uses has long been a phenomenon in the North, and increasingly this is the case in the South as well.

- **Conflict and Warfare**  
Environmental degradation is considered by many to be both a cause and effect of armed conflict. Although the evidence of wars being fought over the environment is weak (except, of course, over land), there is an increasing use of the environment as a “weapon” of

clear that the “environment” is merely a symptom of a larger conflict, and the root cause of any population movement is the conflict itself, and the reasons behind it.

**5. How does one reconcile these different aspects of environment?**

Collectively, it is claimed that these “environmental” changes have resulted in millions of displaced persons. The global deterioration of the environment, continued population growth, and increasing resource scarcity will likely play an increasing role in population movement in the future. But are these factors all “environmental?” And what are the links to migration?

To understand causal relationships, and to better design policy interventions, it is imperative that these five categories be treated separately, and not considered collectively as “environmental degradation.” In some cases, there is minimal impact on population movement, while in others, the role of “environment” is extremely difficult to ascertain. It is clear, for example, that *industrial accidents* have had relatively little impact on migration, with the exception of Chernobyl. Most accidents have resulted in a short-term relocation, but very few (of the more than 2 million cited above) have been displaced permanently from their homes. In the context of other changes, this is a relatively minor concern.

Development projects, while there is little question that they displace large populations, should also be treated separately from other categories. The magnitude of some of the projects is, indeed, daunting, and it has caused the World Bank to avoid any projects which involve major resettlement programs (such as Sardar Sarovar in India). In theory, these projects include a resettlement component, and are unlikely to produce the “waves of environmental refugees” that Homer-Dixon cautions about.

The links between *natural disasters* and population displacement are also problematic. Sadako Ogata, the UN High Commissioner on Refugees, stated in 1992 that the “majority of refugees are found in arid and semi-arid areas of the poorest countries of the world.” Examples of the devastating impact of natural disasters, however, generally come from Bangladesh, Central America, Haiti and South Korea. There is little question that the number of people affected by natural disasters has increased markedly over the past three decades (from 28 million in the 1960s to 64 million in the 1980s). Population growth—particularly in vulner-

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nomic and institutional factors.

The same is true in all cases which are used as “evidence” of environmental refugees. The key factor is that certain populations are becoming more vulnerable to environmental change because of other factors; primary among these are poverty and resource inequality, coupled with population growth, institutional constraints, and economic insufficiency.

**7. *Is there evidence to the contrary? That environmental change is not linked to migration?***

This question is equally problematic. Direct evidence refuting the claim that environmental factors influence population migration suffers the same difficulties of isolating one factor as all studies. Mougeot (1992) did review World Bank projects to determine if environment was a proximate cause of population movement and found no evidence of a connection, but the scope of this study was very limited. It is clear that there remains a need to better understand the linkages between environmental change and population displacement, to identify regions and populations most vulnerable to environmental degradation, and to lend support to the populations at risk. And despite the fact that evidence provided to identify the link between environmental degradation and population displacement is highly speculative, it is important not to trivialize the role the above factors increasingly may play in population movements. Individuals, families and communities have a remarkable ability to adapt to changing and distressed conditions, and the initial response is to develop stronger safety and coping mechanisms to deal with adverse ecological and economic circumstances. But continued environmental degradation and resource depletion coupled with increasing impoverishment in certain regions is placing a heavy burden on these adaptation responses, and they are becoming powerful impelling factors in population displacement.

**8. *What types of environmental problems might there be in the future which could affect migration?***

The Intergovernmental Panel on Climate Change (IPCC) noted in 1990 that the greatest effect of climate change may be on human migration as millions of people will be displaced due to shoreline erosion, coastal flooding and agricultural disruption. Based on this, Myers (1992) projects “environmental refugees” in a greenhouse-affected world (by the middle of the next century) at 150 million persons. While this may be an overstatement, it is true that sea-level rise and coastal flooding will require significant adaptation on the part of some countries, particularly those which have large populations living within a meter of sea-level. The IPCC adds that up to 360,000 km of coast-

line might be affected.

None of the estimates of migration associated with global warming gives any consideration to adaptation mechanisms. While there may be significant implications for some regions, these changes will occur slowly, and by all accounts, most communities and regions will be able to adapt without substantial social or economic cost. Again, the most vulnerable will be the poor, with few options in the face of environmental change.

Water scarcity and poor air quality are other problems which come to mind. But Amman, Jordan—with severe water scarcity—and M /F5 18 -1anuyblef, it iseasjgion

have a strong attachment to the home area and thus a built-in inertia). A proper appreciation and understanding of the complexity and diversity of human responses to environmental degradation is essential if we are to identify the full extent of the phenomenon and plan accordingly.

- *It is extremely difficult to isolate the specific contribution of environmental change in many forms of population*

*movement, especially those which are more “voluntary” in nature.*

It may be relatively easy to identify the parallel occurrence of environmental degradation and population movement, but assuming a causal link may be misleading and dangerous. In reality, movement takes place in response to a combination of environmental, economic, social and political (including armed conflict) stimuli. Thus separating environmental processes from the structures within which they are embedded is both difficult and a distortion of reality.

- *There is also an implicit assumption in the literature that movement is an assured means of obtaining relief from environmental pressures.*

Despite the ancient Chinese proverb that states “Of thirty ways to escape danger, running away is the best” (from El-Hinnawi, 1985), it is not necessarily the case that movement always reduces environmental—or other—stress. In reality, movement may lead to the substitution of one set of stresses (environmental) for another (economic, social, political and/or further environmental stresses). Movers may have to accept whatever opportunities come their way in the new location.

- *An important question—often overlooked where the central preoccupation is with identifying the volume of the migratory movement—concerns the future intentions of environmentally-displaced persons, not least with regard to the duration of their sojourn.*

Do migrants intend to return to their home area, if that option is available, or remain in their new location? The answer to this question will have a significant bearing upon their actions and behaviour in their place of refuge, and is also crucial to the planning pro-

cess. There are three important stages in the movement process: survival—using movement as a means of obtaining relief from environmental stresses; recovery—where movers are able to use their movement to recover from the problem, and consolidate their position; and finally, improvement—where a person is able to use movement as a means of enhancing their position and prospects, in which case a return to the place of origin may be less likely to occur. The prospects of

reaching any one of these stages will be a function of the severity of the environmental crisis and the opportunities which become available to the displacee through movement.

### POLICY RECOMMENDATIONS

These four general conclusions underscore the difficulty in developing policy prescriptions to deal with the issue of environmental degradation and population movement. Migration is a complex phenomenon, and it is not clear what role environmental degradation plays in influencing a person’s decision to migrate. It is also difficult, if not impossible, to isolate environment from other social, economic, and political factors. And there has been a dearth of research that focuses on individual or collective human perceptions and evaluations of actual and expected conditions of the environment as a source of insecurity and migration stress. Developing policy prescriptions in this context, therefore, is a risky enterprise, at best. However, accepting these difficulties, two sets of recommendations are presented below. The first set presents general policy recommendations for assisting communities and regions under environmental stress, particularly where that stress may contribute to population movement. The second set provides specific policy recommendations for agencies involved in setting refugee policy.

#### ***What types of policy recommendations can one make globally?***

Despite the complex nature of migration flows, and the ongoing debate on the role of environmental degradation as a cause of, or contributor to, migration, there is little doubt that we need to give greater consideration to environmental deterioration and resource scarcity in our development assistance activities. This implies a major emphasis on promoting sustainable de-



velopment and its ecological, economic and social manifestations, and ensuring human security. More specific recommendations include:

- Develop a system to help anticipate migrations which

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#### Notes

<sup>1</sup> A note on terminology: Throughout the text, three terms are used to denote the role of the environment as a cause of, or contributor to, population movement. My strong preference is to use the term "environmental migrants" or "environmental degradation and population displacement." These terms encompass the range of cases where environmental degradation may result in a voluntary move, an impelled move, or a forced move. However, the term "environmental refugees"—which implies the movement was forced and that international protection is required—has entered the popular language through the various articles and books noted throughout this document (some of them published by the UN). In cases where direct reference is being made to previous work which uses the term "environmental refugees," this term is kept, but included with quotation marks.

<sup>2</sup>