

Thomas F. Homer-Dixon: "Environmental Scarcities and Violent Conflict: Evidence from Cases" (1994).

HD purports to show that environmental scarcity causes persistent, diffuse and sub-national conflict. His outlook for the future is gloomy, since scarcities will worsen rapidly.

"Environmental scarcity" is a function of (i) "decreases in the quality and quantity of renewable resources," (ii) population growth; and (iii) unequal resource access. The result of increased environmental scarcity is either migration/expulsion, or decreased economic productivity, which, in turn, weaken the state so that ethnic conflicts, *coups d'état* or deprivation conflicts result (Fig. 2). A reduction in the quality or quantity of a resource shrinks the pie, while population growth results in the pie being divided into smaller pieces.

Six types of environmental change were identified: greenhouse-induced climate change; stratospheric ozone depletion; degradation and loss of agricultural land; degradation and removal of forests; depletion and pollution of fresh water supplies; and depletion of fisheries. Three hypotheses are set out: (i) Violent conflict would arise through "simple scarcity" or resource wars; (ii) population movements caused by environmental stress would lead to 'group-identity' conflicts; and (iii) environmental scarcity would lead to economic deprivation and the disruption of key social institutions, and, ultimately, 'deprivation conflicts.' Climate change and ozone depletion are seen as an intervening variable whose effects will manifest themselves through "interaction with other, long-present resource, demographic and economic pressures."

HD then claims that resource scarcity is related not only to physical limits, but also to "preferences, beliefs, and norms," citing the Nicaragua-Sandinistas case, with respect to which it was argued that "the Sandinistas expropriated Miskito lands because of ideology, not scarcity" (9). HD seeks to bridge this gap by offering a definition of scarcity that is "partly subjective." The paper acknowledges that the sources of scarcity interact: For example, physical scarcity, coupled with population growth, can result in unequal resources access if powerful groups seize control of resources and shift the distribution in their favor ("Resource capture": Senegal; West Bank and Philippines cases).

HD then adds another intervening variable, that of "social and technical ingenuity," which may assist societies in avoiding the turmoil associated with environmental scarcity. Technical ingenuity in the areas of agriculture and forestry, for example, may compensate for environmental loss.

Evidence:

Scarcity in renewable resources (eg. timber) does not often lead to resource wars. States fight more over non-renewable resources, because (i) oil and minerals can be more easily converted into state power; and (ii) the countries that are most dependent on renewable resources and that thus are most motivated to seize them, tend to be poor and of lesser capacity. River water is the renewable resource that is most likely to give rise to conflict. Under the migration hypothesis, both "push" and "pull" factors have to be considered. Because environmental scarcity develops

gradually, it is more likely to produce migrants than refugees. Because they consist of weak, marginalized groups, migrants often need the backing of the state before they can cause conflict. Some countries can absorb excess migration without conflict (eg. if labor shortages exist) (HD discusses the Bangladesh case). With respect to the third hypothesis, HD acknowledges that more research is needed on the effects of scarcity on social institutions. Scarcity increases financial and political demands on the state, and it affects economic productivity. However, contextual factors are relevant in predicting whether these pressures will lead to conflict: "Civil strife is a function of both the level of grievance motivating challenger groups and the opportunities available ... to act on their grievances" (25). Environmental scarcity will change both variables. The leadership, organization, and ideology of challenger groups is a causal factor affecting the intensity of grievance and the opportunity to express it, as are international shocks and pressures.