# GLOBAL BLUEPRINTS FOR CHANGE

**First Edition--Prepared in Conjunction with the International Workshop on Disaster Reduction convened on August 19-22, 2001**

The Global Blueprints for Change contain guidance for working together to improve the capability to identify indicators of physical, social, enterprise, and environmental vulnerabilities throughout the world and to select and implement realistic solutions to reduce them towards acceptable levels.

## THEME A: LIVING WITH THE POTENTIAL FOR NATURAL AND TECHNOLOGICAL HAZARDS

### Topic A.2: Reducing Vulnerabilities in Existing Buildings and Lifelines [with Consideration of Social and Environmental Factors]

## "A Note on Closing the Circle: The last Steps Needed"

**This Blueprint was prepared by John Wiener, University of Colorado**

# A NOTE ON CLOSING THE CIRCLE: THE LAST STEPS NEEDED

**John Weiner**[1]

**Abstract:** This contribution to the Global Blueprints for Change is intended to help with the development of the new epistemic community of people working to reduce vulnerability to hazards. Because there are excellent collections of case studies available, and good treatments of the larger issues of development, reduction of poverty and vulnerability, and mitigation of hazard, this contribution is intended to provide only a brief perspective on the evolution of current understanding, and a description of the remaining conceptual steps that are needed.

## Background

In a large sense, two of the three necessary changes in our understanding have been taken.

First, the misunderstanding of "natural hazards" as events unrelated to or separate from human activity and human choice is no longer credible. The fundamental involvement of human organizations, cultural and institutional context, and political-economic structures cannot be overlooked or wished away. The creation, distribution, and mitigation of vulnerability to hazards of all kinds is a social interaction with either other social processes or geophysical processes or both. There is no purely "natural" hazard in the full sense of a risk or danger for which affected persons have no defense or remedy (see case study collections).

Just so, understanding of economic and social development has undergone enormous changes since the colonial ideals of "bringing civilization" from Northern Europe and the United States to the vast majority of the world (Wolf 1982, Arndt 1987, Corbridge 1995). Respect for the adaptations and arrangements people have made for their worlds has only gradually appeared (Cernea 1991, Chambers 1983, 1997).

Together, recognition of local adaptation and specificity of conditions, with recognition that hazards involve human choices, mean that simple prescriptions, particularly those from far away and from partial understandings of the situation, are often more problem than solution (Vayda and Walters 1999, Chambers 1997, Pulwarty 1997, Hewitt 1997, Munasinghe and Clarke 1995, Gunderson et al. 1995, Norgaard 1994).

Second, there has been a major revolution in scientific understanding of ecological processes. The Victorian era fostered ideas of plant sociology, and climax communities of vegetation and associated animals. The West began the 20th Century with such ideas of stability and successful adaptation as the result of Darwinian process. Most of the beginnings of social science involved taking back these notions and applying them to humans, as in the case of urban form and processes, and ideas of class and ethnic differentiation as reflections of niche-filling (see histories of anthropology, e.g. Plattner

[1] University of Colorado, boulder, Colorado

1989, Harris 1968; sociology, e.g. Giddens, 1987, Giddens and Turner 1987, Wallerstein 1990, and human ecology, e.g. Young 1983). By the end of the Century, notions of stable carrying capacity, climax communities, and other self-perpetuating "normal conditions" had been almost abandoned (see Shrader-Frechette and McCoy, 1993, 1994), in favor of a more dynamic and complex understanding of natural processes and on-going adjustment and variation. The discontinuities of ecological processes are problematic (see Holling and Sanderson 1996, and Holling and other sections in Clark and Munn, Eds. 1985, especially for clear introduction); they preclude simple answers for complicated questions in almost all cases (Little et al. 1987, Moran 1990, Tobin and Montz 1997).

**Strategic Considerations**

The local specifics of peoples' lives and hazards, and the inevitability of perturbations and instabilities in the physical and biological world mean that hazards are not special or separated from "normal" conditions (O'Keefe, Westgate and Wisner 1976, and the case study collections). Further, human adaptation to place has been profoundly influenced by the extremes, more than the means (Vayda and McCay 1975, Oliver-Smith and Hoffman 1999). The impacts of disaster are realized within the social and physical context – the human environment is composed of both aspects, and the impacts are felt or evaded depending on choices made in each. Human rules and policies, social structures, and the distribution of power and wealth directly influence outcomes triggered by physical catalysts (see the collections referenced and also Peacock et al. 1997 for examples from the U.S.).

**Implementation Considerations**

The first great steps are the recognition of the human role, and the dynamics of both the natural as well as social environments. The remaining steps "close the circle" – we must acknowledge and respond to the way disasters aggravate poverty and lack of choice, which compel further and worse abuses of the physical environment. This contribution e was written to suggest that there are several concrete activities which support any other hazard mitigation activity. In fact, the point about "closing the circle" may seem to be obvious, but it has had little actual effect yet.

**Barriers to Implementation**

We can not seem to get out of the cascade of failure caused by disasters, which worsen poverty and deprivation and narrow our range of choices.

**Recommendations**

Closing the circle requires a response to the fact that disasters worsen poverty and deprivation, which narrow the range of human choice, and compel ever-greater environmental destruction, leading to ever more frequent disasters. We are in a cascade of failure.

All educated persons with access to the scientific and academic communities should undertake to provide a "Witness" function, in which they note wherever appropriate the conditions of the local human-environment relationship. The sustainability of a given combination of place and people depends on all the relationships, to some extent, but some are clearly more critical than others. Soil degradation, for example, is often concealed by massive inputs transformed from petroleum and other sources (the annual and biennial volumes referenced cover this well, especially World Watch). Building on steep slopes, especially downhill from drainage areas badly affected by deforestation or land clearing, is obvious in many places. These blueprints identify scores of examples. A huge range of local and traveling expertise can be brought to bear on mapping the hazards. But, the witness function goes a little farther, in making this knowledge public. We may not be able to force a government to care for its people, but we can help prevent concealing the malignancy.

The second activity is accounting, as made more honest over the last few decades (Repetto et al. 1989, Bromley 1995). Counting all economic activity as if it were equally productive is wrong. Desperate efforts to restore destroyed landscapes may move funds around, but the net is an effort to get back to zero, compared to the value of ecological and productive services provided before the destruction. While the economists wrestle with technical issues of "green accounting", the rest of us can simply note the loss and waste of assets and destruction of productive potential (see Ascher 1999, Ascher and Healy 1990, World Resources Institute 2000/2001).

The third activity is labeling. The conventional response to a huge variety of hazard conditions has been to resort to use of a buffer or emergency supply of some sort – the classic modern example is pumping ground-water during times of drought. But after the stress is eased, the "ratchet" characteristic of irreversible changes of resource use applies (Blaikie et al. 1994 discuss this very well; World Resources 2000, Zerner 1999, 2000). Buffers must be understood to be buffers, and converting them to resources to consume, especially non-renewably, should be labeled as such. World-wide, increasing pressure on resources has resulted in conversion from buffer to consumable to consumed. We must at least label this.

Fourth, we should strive whenever possible to identify the terribly misleading and destructive disconnections between capacity to damage and exposure to the consequences; between the capacity to enjoy benefits while displacing the costs onto the future or others (Bender 1997, Bromley 1995, Clark 1991, Norgaard and Howarth 1991, Ribot et al. 1996). Despite great progress in rhetoric, ownership as capacity to destroy is almost universally privileged over ownership as stewardship, and the results are obvious in resource destruction worldwide.

**References:**

Important Case Study Collections with Theory and Interpretation:

These are not all of the collections available, but each has very high value, and together they provide a solid background for the issues and the theory with which we now understand them. Academic readers may want to consider them chronologically, and others may want to consider them topically or geographically.

Hewitt, K., Ed., 1983, Interpretations of Calamity. Boston: Allen and Unwin. Note: this is now out of print, but should be available from most research libraries. It is the most important statement of the modern perspective.

Blaikie, P. T. Cannon, I. Davies and B. Wisner, 1994, At Risk: Natural Hazards, people's vulnerability, and disasters. London: Routledge.

Varley, A., Ed., 1994, Disasters, Development and Environment. Chichester and New York: John Wiley and Sons.

Oliver-Smith, A., and S. M. Hoffman, Eds., 1999, The Angry Earth: Disaster in Anthropological Perspective. London: Routledge.

Websites:

There are increasingly rich websites available on the internet, and in fact too many to list here in any reasonable degree of comprehensiveness. The following organizations provide especially notable resources.

La Red (largely in Spanish):

Natural Hazards Research Applications and Information Center – provides links and references to many other sites.

Organization of American States

Pan-American Health Organization

Radix: Roots of Disaster

United Nations agencies

Global Overviews

There are important annual or biennial volumes provided by the following. Each volume has topical foci, as well as updated data tables on resources, indicators or other measures. A reader following these volumes can observe a great deal about the ideas and ideologies informing (or not) the development and intervention efforts underway by governments, United Nations agencies, non-governmental organizations, and others. In most cases, working on these volumes is a sign of significant achievement in various academic disciplines, and they are very carefully edited.

United Nations Development Programme, Human Development Report, Oxford, New York and other places, Oxford University Press. This annual provides careful coverage

of indicators of well or ill-being, and the more recent issues have been especially informative, including the 2000 volume focusing on human rights..

World Bank, World Development Report…. Oxford and New York and other places: Oxford University Press. The World Development Report for 2000/2001, "Attacking Poverty" is absolutely outstanding. While the Bank's actions may not reflect its publications, the 1998/1999 and 2000/2001 reports are very good.

World Resources Institute, World Resources…. Oxford, New York and other places: Oxford University Press. The 2000/2001 volume of this biennial is quite useful, and was produced in cooperation with the World Bank, United Nations Development Programme and United Nations Environment Programme. Previous volumes have also been very good.

World Watch Institute, State of the World… New York: W.W. Norton (and in 30 or so other languages; contact World Watch for details). The 2001 volume has an excellent chapter on hazards, and there was also a good summary in 1989.

Other references:


Arndt, H.W., 1987, Economic Development: the history of an idea. Chicago: University of Chicago Press.

Ascher, W., 1999, Why Governments Waste Natural Resources: Policy failures in developing countries. Baltimore MD: Johns Hopkins University Press.

Ascher, W. and R. G. Healy, 1990, Natural Resource Decision-making in Developing Countries. Durham, NC: Duke University Press.

Balland, J. and J. Platteau, 1996, Halting Degradation of Natural Resources: Is there a role for rural communities? Oxford: U.N. Food and Agriculture Organization and Clarendon Press.

Beatley, T. and P.R. Berke, 1997, Reducing vulnerability. Hemisphere 8(1): 29-35.

Bender, S.O., 1997, A matter of choice. Hemisphere 8(1): 36-40.

Blaikie, P. T. Cannon, I. Davies and B. Wisner, 1994, At Risk: Natural Hazards, people's vulnerability, and disasters. London: Routledge.

Bromley, D.W., Ed., 1995. Handbook of Environmental Economics. Cambridge: Blackwell.

Clarke, C.L. and M. Munasinghe, 1995, Economic aspects of disasters and sustainable development: an introduction. Pp 1-10 in Munasinghe, M. and C. Clarke, Eds., 1995, Disaster Prevention for Sustainable Development: Economic and Policy Issues; A report from the Yokohama World Conference on Natural Disaster Reduction, May 1994; Washington, D.C.: The World Bank.

Cernea, M., Ed., 1991, Putting People First, 2d Ed., Oxford: Oxford University Press.

Chambers, R., 1997, Whose Reality Counts? Putting the First Last. London: Intermediate Technology.

Chambers, R., 1983, Rural Development: Putting the Last First. London: Longman.

Clark, C., 1991, Economic Biases against Sustainable Development. Pages 319-330 in Costanza, R., Ed., Ecological Economics: The science and management of sustainability. New York: Columbia University Press.

Clark, W.C. and R.E. Munn, Eds., 1985, Sustainable Development of the Biosphere. Cambridge: Cambridge University Press.

Corbridge, S., Ed., 1995, Development Studies: A Reader. London: Edward Arnold.

Cutter, S.L., Ed., 1994, Environmental Risks and Hazards. Englewood Cliffs, N.J.: Prentice Hall.

Geoghegan, J. et al., 1998, "Socializing the Pixel" and "Pixelizing the Social" in Land-Use and Land-Cover Change. Pp 51-69 in Liverman, D., E.F. Moran, R.R. Rindfuss and P.C. Stern, Eds., People and Pixels: Linking Remote Sensing and Social Sciences. Washington D.C.: National Academy Press.

Giddens, A., 1987, Sociology and Modern Social Theory. Stanford and Oxford: Stanford University Press and Polity Press and Blackwell.

Giddens, A. and J.H. Turner, Eds., 1987, Social Theory Today. Stanford: Stanford University Press.

Gunderson, L.H., C.S. Holling and S.S. Light, Eds., 1995, Barriers and Bridges to the renewal of ecosystems and institutions. New York: Columbia University Press.

Harris, M., 1968, The Rise of Anthropological Theory. New York: Thomas Y. Crowell, subsequently Harper and Row).

Hewitt, K., 1997, Regions of Risk: A Geographical Introduction to Disasters. Harlow, U.K.: Addison Wesley Longman Ltd.

Holling, C.S. and S. Sanderson, 1996, Dynamics of (Dis)harmony in Ecological and Social Systems. Pp 57-86 in Hanna, S.S., K. Folke, K-G. Maler, Eds., Rights to Nature. Washington, D.C.: Island Press.

Little, P.D., M.M. Horowitz and A.E. Nyerges, Eds., 1987, Lands at Risk in the Third World: Local level perspectives. Boulder: Westview Press.

Maskrey, A. 1991, Community Approaches to Disaster Mitigation. Oxford: Oxfam.

Maskrey, A., and W. Peacock, 1997, A call for action. Hemisphere 8(1): 4-8.

Metz, B. and O. Davidson, et al., 2000, Methodological and Technological Issues in Technology Transfer – Special report by Subsidiary Body on Scientific and Technological Advice. Cambridge: Cambridge U. Press for Intergovernmental Panel on Climate Change, available on IPCC website.

Moran, E.F., Ed., 1990, The Ecosystem Approach in Anthropology: From concept to practise. Ann Arbor: University of Michigan Press.

Munasinghe, M. and C. Clarke, Eds., 1995, Disaster Prevention for Sustainable Development: Economic and Policy Issues; A report from the Yokohama World Conference on Natural Disaster Reduction, May 1994; Washington, D.C.: The World Bank.

Norgaard, R.B., 1994, Development Betrayed. London: Routledge.

Norgaard, R.B. and R.B. Howarth, 1991, Sustainability and discounting the future. Pages 88-101 in Costanza, R., Ed., Ecological Economics: The science and management of sustainability. New York: Columbia University Press.

O'Keefe, P., K. Westgate and B. Wisner, 1976, Taking the naturalness out of natural disaster. Nature 260, April 15, 1976.

Oliver-Smith, A., and S. M. Hoffman, Eds., 1999, The Angry Earth: Disaster in Anthropological Perspective. London: Routledge.

Organization of American States, 1991, Primer on Natural Hazard Management in Integrated Regional Development Planning. Washington, D.C.: Natural Hazards Project of the Department of Regional Development and Environment, Executive Secretariat for Economic and Social Affairs, Organization of American States.

Peacock, W.G., B.H. Morrow, and H. Gladwin, Eds., 1997, Hurricane Andrew: Ethnicity, Gender, and the Sociology of Disaster. London: Routledge.

Plattner, S., Ed., 1989, Economic Anthropology. Stanford: Stanford University Press.

Pulwarty, R., 1997, The political ecology of vulnerability to hurricane-related hazards, pp 185-214 in Diaz, H. and R. Pulwarty, Eds., 1997, Hurricanes -- Climate and Socioeconomic Impacts. Berlin and New York: Springer-Verlag.

Repetto, R., W. Magrath, M. Wells, C. Beer and F. Rossini, 1989, Wasting Assets: Natural Resources in the National Income Accounts. Washington, D.C.: World Resources Institute.

Ribot, J., A.R. Magalhaes and S.S. Panagides, Eds., 1996, Climate Variability, Climate Change and Social Vulnerability in the Semi-Arid Tropics. Cambridge: Cambridge U. Press.

Shrader-Frechette, K.S. and E.D. McCoy, 1994, How the tail wages the dog: How value judgements determine ecological science. Environmental Values 3: 107-120.

Shrader-Frechette, K.S. and E.D. McCoy, 1993, Method in Ecology: Strategies for conservation. Cambridge: Cambridge University Press.

Steward, J.H., 1955, Theory of Culture Change. Urbana, IL: University of Illinois Press.

Tobin, G.A. and B.E. Montz, 1997, Natural Hazards-- Explanation and Integration. New York: Guilford Press.

Varley, A., Ed., 1994, Disasters, Development and Environment. Chichester and New York: John Wiley and Sons.

Vayda, A.O. and B.B. Walters, 1999, Against Political Ecology. Human Ecology 27(1): 167-179.

Vayda, A. and B.J. McCay, 1975, New directions in ecology and ecological anthropology. Annual Review of Anthropology 4: 293-306.

Wallerstein, I., 1990, Unthinking Social Science: The limits of Nineteenth Century Paradigms. London: Polity Press, in association with Basil Blackwell.

Wolf, E., 1982, Europe and the People Without History. Berkeley: University of California.

Young, G.L., Ed., 1983, Origins of Human Ecology. Stroudsburg, PA: Hutchinson Ross Pub. Co.

Zerner, C., 1999, Justice and Conservation: Insights from People, Plants and Justice: The Politics of Nature Conservation. New York: The Rainforest Alliance.

Zerner, C., Ed., 2000, People, Plants and Justice: The Politics of Nature Conservation. New York: Columbia University Press.