- Executive Summary -

THE 2050 PROJECT

TRANSITION TO SUSTAINABILITY IN THE NEXT CENTURY

A project organized by
the World Resources Institute, the Brookings Institution, and,
the Santa Fe Institute

Summary: This major new collaborative project is exploring one of the most complex and difficult problems facing humanity: how can we achieve a sustainable existence on this planet by the year 2050? The 2050 Project will develop innovative techniques for performing an integrative policy analysis of this issue using a combination of alternative "visions," base studies, scenario development, and computer modeling. The project will examine alternative concepts of sustainability and explore desirable future conditions, the actions needed to reach them, and the potential for unexpected developments or surprises that could profoundly alter future conditions. The project will develop policy recommendations and action plans for the next decade to help achieve sustainability, and disseminate these findings in a variety of innovative means.

BACKGROUND:

The term "sustainable development" was brought into common use by the World Commission on Environment and Development (the Brundtland Commission) in its 1987 report, Our Common Future. The Commission's definition of the term -- meeting the needs of the present generation without compromising the ability of future generations to meet theirs -- has been a powerful concept for focusing global attention on the need to integrate environmental stewardship and economic development.

Making the concept of sustainability precise, however, has proven difficult. At least some resources must be consumed in meeting today's needs, and the needs of future generations can only be estimated, since both the number of people and their needs depend upon events and conditions that have not yet occurred. What, then, constitutes a sustainable society? What time frame should be considered? What indicators would tell us whether or not we are moving toward sustainability? What are the strategies and actions that would get us there?

The 2050 Project is an innovative attempt to address these issues. The 4-year project began in January 1993. **The goal is to define conditions under which global society could be sustainable in 2050, and from that vision, determine policy strategies and actions for the next decade that would help achieve those conditions.** The year 2050 was chosen because it is far enough in the future for critical population, energy, and global warming issues to play out and for

large-scale social and economic transitions to occur; yet, it is within the life span of today's children, giving the results a direct and personal meaning.

PROJECT ACTIVITIES:

Three characteristics make the 2050 Project unique. First, unlike many studies of the future, which extrapolate from current conditions and trends, the 2050 Project will first determine conditions under which global society could be considered sustainable in the year 2050, and then work back to explore whether -- and how -- actions today can help reach those conditions.

Second, the 2050 Project will be much more than an analytical exercise. Along with a cutting-edge policy analysis and recommendations, it will produce scenario-modelling tools for decision makers. In addition, the project intends to have a measurable impact on policy decisions and aims to build popular support for the actions needed to achieve sustainability. To this end, the project will produce a popular book, both television-style and interactive video presentations, and computer games.

Third, the process by which the project will be carried out is designed to ensure that it is truly global in scope and content and adaptive in approach. The expertise of researchers and others in developing as well as developed countries will be sought, with developing country partners collaborating on each major component of the analysis. These activities are expected to help build the capacity for research and analysis in developing countries, as well as establish channels for disseminating the project's findings and recommendations. In addition, the project design encourages an adaptive approach. Project components are structured so as to enable adjustment every six months, and a major review of the overall project focus is planned each year.

The 2050 Project consists of three interrelated parts: development of the information base, integrative policy analysis, and dissemination of products.

Development of the Information Base:

This will include commissioning papers and convening a symposium of diverse thinkers from North and South to describe crucial attributes of sustainability; undertaking a series of base studies to describe key economic sectors and other components of the global society and to develop quantitative characterizations of sustainability; and examining a series of cross-cutting and non-sectoral issues. The development of innovative modeling techniques will also be a focus in this part of the project.

Alternative visions of sustainability. Because it inevitably involves trade-offs among social goals, sustainability is a social construct. The policy strategies and actions for achieving a sustainable global system must incorporate considerations of science and technology, culture, values, and economics. A first step will be for individuals from all parts of the world to assay the human dimensions of sustainability in their region. From these essays and their elaboration in an international meeting, several alternative visions of sustainability will be formulated and used throughout the project.

Base studies. Detailed assessments of the conditions necessary for a sustainable global system will be developed in a series of base studies examining key economic and other sectors. These studies will assemble and evaluate current data, examine relevant mechanisms and relationships on the global, regional, and local scales, and suggest actions needed to achieve sustainability and the timing of these actions. Topics to be addressed by base studies include: population and human capital, food and agriculture, energy and climate, environmental toxification, ecosystems, water systems, and industrial structure.

Cross-Cutting and Non-Sectoral Studies. A number of relevant issues fall "between the cracks" or cross several of the base study topics. A few experts with different disciplines or relevant experiences will be asked to write papers on such issues. Topics to be addressed include: information systems (e.g., global television news, computer networks, and fax networks), security and governance (e.g., environmental and military conflicts, global harmonization versus political fragmentation, elimination of large-scale military conquests), and models for economic development (e.g., alternative patterns of energy intensity, ways of providing access to education and jobs).

Innovative Computer Modelling. Many of the linkages among topics that must be addressed in The 2050 Project involve a large number of elements and masses of data. Many are non-linear, and the systems involved change or adapt over time. One of the unique aspects of The 2050 Project is the inclusion of research on new techniques for modelling such phenomena. This will include work on general modelling of complex phenomena, simulations involving artificial worlds, and approaches for identifying the key variables out of all those that occur in a given situation. In addition, a data base and software program will be produced for scenario development and planning purposes.

The Cutting-Edge Integrative Policy Analysis:

The second and most crucial component of The 2050 Project will be the integrative policy analysis. This analysis will be unique both because of its global scale and its comprehensive scope, and innovative procedures for performing the analysis will be developed (building and enlarging on the earlier efforts of others). Central tasks in the analysis include: analysis of critical concepts and issues, generation of development scenarios, and formulation of policy strategies and actions.

Analysis of Critical Concepts and Issues. One of the largest challenges facing The 2050 Project is identifying linkages among the various components of the global system. A key part of this will be examining critical concepts and issues and their applicability to the data and assessments in other parts of the project. Topics to be examined include: alternative visions of sustainability, regional differentiation (the project will aggregate data and examine policy options for about a dozen regions), driving forces and proximate causes (linkages between direct and immediate human actions and the fundamental forces driving those actions), predetermined elements (factors defining the limits for future developments), and critical uncertainties (both in terms of potential surprises and policy leverage).

Scenarios and Paths of Development. All of this will factor into the development of scenarios -- stories about the way the world might turn out -- which will constitute a key part of the integrative analysis. These scenarios need to go beyond the physical aspects of sustainability and

incorporate economic and development issues. The scenarios will thus need to describe the fundamental attributes of alternative possible developments. It is here that current trends, or the so-called "business as usual" alternative, will be compared to the possibilities satisfying the requirements of global sustainability.

Policy Strategies and Actions. The final component of the analysis will be the development of recommendations for policy strategies and actions that policy makers can use to guide their decision making. The recommendations will in so far as possible be robust across the different development scenarios, and will be regionally specific. The recommendations will emphasize choices to be made during the next decade, but will be formulated in terms of more extensive strategies including actions needed further in the future.

Project Products:

The 2050 Project aspires not only to a landmark study of how to achieve global sustainability, but also to affect how people think about sustainability and to have a measurable impact on policy decisions. Accordingly, the project plans a broader range of products than is common in most studies, including: publications, television and videotape products, and computer programs and products.

Publications. The project will develop several publications -- a newsletter, a monograph series, a "flagship" policy book (with a separately published summary), and a book for general readership. In addition, project researchers may produce separate scientific publications.

Television and Videotape. A standard television-style presentation and an interactive video will be prepared. These will be made widely available to museums, science centers, and schools. The interactive video is also expected to be appropriate for home use.

Computer Programs and Products. The project will develop computer games illustrating key aspects of sustainable and nonsustainable systems. In addition, the scenario planning data base will be further developed for use by policy experts, planners, researchers, and others.

OUTREACH:

The 2050 Project will engage in a major effort to ensure that its recommendations are understood and heeded. There will be vigorous efforts to publicize the project's findings through the electronic and print media. The project will hold special briefings for key decision makers in the United States as well as other parts of the world. A variety of means will be used to disseminate information to non-governmental organizations and the public.