



3 October 2008

The Centre for Ecological Research and Forestry Applications (CREAF), in the celebration of its 20th anniversary, organised a meeting with a group of international experts to discuss the environmental future of the planet on the 2 and 3 of October. The work of both days is summarized in a document called Declaration of Barcelona 2008: Challenges and Pathways to Earth Sustainability, which you will find below. Targeted to governments and to business agents from all over the world, this document claims the immediate adoption of measures to mitigate the global change and a scientific and technological revolution to advance towards a coherent sustainable development.

Barcelona Declaration 2008:

Challenges and Pathways to Earth Sustainability

The coming three decades will determine whether the population of the world comes into balance with the capacity of the biosphere to support it, or whether catastrophic changes in the environment brought on by climate change, losses of biodiversity, pollution of air and water, and overharvesting of natural resources will lead to the end of the improvement of wellbeing that has characterized the Modern Era.

Current indicators are alarming. Declining trends in environmental conditions either continue unchanged from previous decades or are accelerating beyond our worst projections. There is growing evidence that irreversible changes have already occurred or are imminent.

The deterioration of the global environment continues despite current international efforts, including adoption of the Millennium Development Goals and treaties to address climate change, biodiversity loss, and land degradation. Clearly, global action to reverse the negative trends is inadequate, but it is not too late to collectively create a viable future. The scale, urgency and severity of the problems means that no action is too small to matter, too large to contemplate, or too soon to begin.

Nine scientific experts on global change, who met in Barcelona under the auspices of the Center for Ecological and Forestry Research (CREAF), call for a *Scientific and Technological Revolution* to enable pathways of development consistent with global sustainability. The following actions are urged:

- Immediate transition to non-carbon emitting energy systems.
- Accounting for changes in natural capital in measures of economic performance.
- Immediately begin adaptive measures to address global environmental change.
- Empowering Developing Countries to play a larger role in global solutions.

Transition to non-carbon emitting energy systems must be immediate. The concentration of carbon dioxide in the atmosphere, the most important human induced greenhouse gas, has already exceeded the levels that can be considered safe with respect to the Earth's climate. This makes it necessary to take immediate steps towards weaning the global economy off carbon emitting energies. Leading developed countries are in the best technological, political, and economic position to begin this transition immediately while taking full economic advantage from early action. Concurrent



technological transfer to developing countries will ensure a rapid global decline in emissions in light of the fact that developing countries account now for over half of all fossil fuel emissions.

Natural capital must be accounted for in measures of economic performance. The wealth of nations includes its material, human, and natural capital. In practice, material capital alone is used to indicate national economic status. As a result, even though the gross domestic product is rising, countries are often getting poorer. Taking account of changes in natural capital (the capacity of ecosystems to supply benefits to society in the future) in measures of economic performance will help countries to choose more sustainable and equitable development pathways. This will include the decoupling of deforestation in tropical regions from development. Wasting natural capital and destroying options for the future is irrational behavior. It occurs because the information on which we base our decisions is incomplete. Greater inclusion of the full cost to society, now and in the future, in the price of products and developments would bring the power of market forces into the service of sustainable solutions.

An effective response to adapt to global environmental change must begin now. We are already experiencing the effects of climate change and other environmental changes, and these impacts will increase rapidly in the future. Development planning at all scales, including global, national, regional and local, will need to change fundamentally to be less vulnerable to new and more variable climates and to cope with changes in the delivery of ecosystem services that underlie life support systems. Institutions, organizations, and governments need to adopt a more integrative and interlinked set of policies and governance structures to increase their resilience to the impacts of global change. Knowledge is available now to begin those actions but more trained practitioners are needed to implement effective adaptive actions and share lessons learned. There is unrecognized and unused knowledge on adaptation to specific risks in low-income countries that needs to be mobilized. Research is needed to ensure that adaptation programs and activities are effective and efficient locally.

Developing Countries must be empowered to play a larger role in global solutions. Immediate investment in research infrastructure and human capacity is necessary to improve and scale-up research programs in crucial areas for development. This will create the needed national/regional capacity to deal with the global changes occurring today, strengthening both their capacity to mitigate but also to adapt to the changes, and critically come up with alternative solutions to development that are viable and appropriate local and globally. The improvement of research infrastructure in the developing countries will also deepen people's understanding of their environment and their responsibility towards sustainability, and allows for ethical choices on the development pathways to follow.

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