

Chapter 32

Potsdam Memorandum

Main conclusions from the symposium ‘Global Sustainability: A Nobel Cause’, Potsdam, Germany, 8–10 October 2007

We are standing at a moment in history when a Great Transformation is needed to respond to the immense threat to our planet. This transformation must begin immediately and is strongly supported by all present at the Potsdam Nobel Laureate Symposium.

The need for a Great Transformation

The world-wide socioeconomic acceleration after World War II has pushed our planet into an unprecedented situation: humanity is acting now as a quasi-geological force on a planetary scale that will qualitatively and irreversibly alter the natural Earth System mode of operation – should business as usual be pursued.

As outlined by the Intergovernmental Panel on Climate Change, anthropogenic global warming through greenhouse gas emissions is the foremost of an entire set of emerging development, security and environmental crises which require an integrated response. Yet climate protection ambitions appear to be on a collision course with the predominant growth paradigm that disconnects human welfare from the capacity of the planet to sustain growth. Humanity is faced with the major challenge of making a drastic reduction in greenhouse gas emissions, which will require shifts in lifestyles in rich countries, while meeting urgent development and growth needs in the poorer countries, the home of the vast majority of humanity underlining the right to development. Ensuring that some nine billion people can live a decent life requires, above all, access to affordable, sustainable and reliable energy services, which are currently based almost exclusively on fossil fuel resources and unsustainable use of traditional fuels. The issue of ‘carbon justice’ and the urgency of the matter at hand require unprecedented cooperation and rapidity in response.

Is there a ‘third way’ between environmental destabilization and persisting underdevelopment? Yes, there is, but this way has to bring about, rapidly and

ubiquitously, a thorough re-invention of our industrial metabolism – the Great Transformation. This is an awesome challenge, yet we have one comparative advantage over all previous generations: an incredibly advanced system of knowledge production that can be harnessed, in principle, to co-generate that transformation together with courageous political leaders, enlightened business executives and civil society at large.

Crucial sustainability challenges and responses

The whole gathering placed the challenge of climate change and energy security firmly in the context of sustainable development, supported the rights of developing countries to social and economic development, and took careful account of interactions between climate policy and the challenges of development in the short, medium and long-term. In so doing it expressed its strong support for the Millennium Development Goals and the concepts of broad-based and multi-dimensional development that they embody.

A range of actions in the areas of climate stabilization, energy security and sustainable development are considered necessary, in particular, these could include:

1. In order to achieve **climate stabilization**, a post-2012 regime should comprise the following key elements:
 - A global target such as the 2°C-limit relative to preindustrial levels or the (largely equivalent) halving of worldwide greenhouse gas emissions by 2050. A series of consistent short and medium-term emissions targets are also essential to drive investment and technology and to reduce the need for greater action later.
 - A leadership role of industrialized countries both in regards to drastic emissions reductions and development of low/no-carbon technologies in order to give poor developing countries room for urgently needed economic growth within the boundaries of a global carbon contract.
 - Carbon justice. Striving for a long-term convergence to equal-per-capita emissions rights accomplished through a medium-term multi-stage approach accounting for differentiated national capacities. An important goal would be the reduction of the total amount of greenhouse gas emissions, which is the product of per capita consumption times population, where both factors are crucial.
 - The generation of a carbon price, for instance, through an international cap-and-trade system (of systems) based on auctioning permits.
 - The establishment of a powerful worldwide process supporting climate-friendly innovation, international cooperation of R&D institutions, combined

- with increased RD&D funding, integrating basic research as well, to facilitate technology transfer and cooperation.
- Major contributions to a multinational funding system for enhancing adaptive capacities.
 - Scaled-up efforts to both reduce emissions from deforestation and accelerate ecologically appropriate reforestation by creating new incentives for communities and countries to preserve and increase their forests.
 - Ensure reductions of non-CO₂ greenhouse gases.
2. Energy demand is projected to grow dramatically. Efficiency and a range of readily-available low carbon technologies are the key to offset the growth for energy services. In order to attain **energy security**, consistent with environmental integrity, an international strategy should have the following foci:
- Systemic efficiency revolution and productivity increase including fuel switching, combined heat power and an energy saving lifestyle which is necessary but not sufficient.
 - Portfolio approach consisting of a systematic exploration of the economic and technological potential of all of the relevant mitigation options.
 - Design of investment strategies based on the portfolio approach; e.g., intelligent systems, grid infrastructure, storage technologies, demand-side measures, and deployment of renewables such as solar that has huge potential already now. Upfront investments, in addition to carbon finance, are needed to support emerging technologies and increase their market share; e.g., feed-in laws.
 - Rapid implementation of demonstration projects for advanced solar energy and carbon capture and storage to foster ingenuity and drive down costs.
 - Stabilizing long-term expectations of investors at capital markets and establishing microcredit institutions in developing countries aimed at financing low-carbon technologies.

A global contract between science and society

There is overwhelming evidence that we need to tap all sources of ingenuity and cooperation to meet the environment and development challenges of the twenty-first century and beyond. This implies, in particular, that the scientific community engages in a strategic alliance with the leaders, institutions and movements representing the worldwide civil society. In turn, governments, industries and private donors should commit to additional investments in the knowledge enterprise that is searching for sustainable solutions.

This new contract between science and society would embrace many elements, yet three of them are critically important:

1. A multi-national innovation program on the basic needs of human beings (energy, air, water, food, health etc.) that surpasses, in many respects, the national crash programs of the past (Manhattan, Sputnik, Apollo, Green Revolution etc.).
2. Removal of the persisting cognitive divides and barriers through a global communication system (ranging from international discourse fora to a truly worldwide web of digital information flow). Part of this would be the emerging 'Global Earth Observation System of Systems (GEOSS)' that could especially provide early warning about imminent natural or social sustainability crises.
3. A global initiative on the advancement of sustainability science, education and training. The best young minds, especially those of women, need to be motivated to engage in interdisciplinary problem-solving, based on ever enhanced disciplinary excellence. The ambition is to win over the next generation for laying the cognitive foundations for the well-being of the generations further down the line.