

Draft

Zugspitze Declaration: Dealing Wisely with the Planet

Faced with serious challenges to the Earth system, a group of scientists, politicians, and business representatives met for four days in Wildbad Kreuth, Germany near Munich for the workshop on “**Earth-System Engineering - The Art of Dealing Wisely with the Planet Earth.**”

They came to the following conclusions:

- 1. Global Crisis:** The biggest challenges for the survival of the increasing world population are the food and water deficits, threats by climate change and pollution, and poverty and inequality. Global climate change is exacerbating the other Earth system problems.
- 2. Capability:** The world has recently shown its capabilities and flexibility to quickly respond to short-term natural disasters. Successful environmental management has addressed problems such as acid rain and stratospheric ozone depletion. The signatories of the workshop urge these capabilities be quickly mobilized to address the Earth-system crises which are far more serious and of a long-term nature.
- 3. Actions:** There is no excuse for delaying the implementation of current state-of-the-art technologies. While there is a need for innovation in certain areas, proven, established, and sustainable sets of alternatives already exist to solve large parts of the global crisis. The signatories of the workshop want to motivate those who have solutions to share this knowledge with the wider community and get started.
- 4. Awareness:** Developing solutions to the Earth system crises must support social empowerment to change behavior and deal wisely with the Earth. This is the main responsibility of current generation.
- 5. Governing the Commons:** The global commons, including the atmosphere and oceans, are currently only partially regulated and degrading them carries few penalties. We recommend the formation of a binding international legal framework and a Global Commons Trust. Most urgent is the administration of a global cap and redistribution system for atmospheric carbon or climate credits.
- 6. Climate Engineering:** Climate engineering is deliberate, planned large-scale intervention in the climate system. Such initiatives with potential global effects need rigorous assessment and authorization by an international governance institution. Climate engineering is not an alternative to the necessity to mitigate. Unproven measures should only be the last resort.
- 7. Sustainability:** The new frontier in Earth system engineering is better management of the global commons. Society must find a sustainable relationship between the natural environment and human endeavors.



The Institute for Advanced Study of the Technische Universität München (TUM-IAS) plans to draft a framework for a Global Commons Trust, define an empowerment initiative, and outline an accelerated research agenda that is holistic and multi-disciplinary. TUM-IAS invites collaboration from experts and international organizations such as UNESCO.

Garmisch-Partenkirchen

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