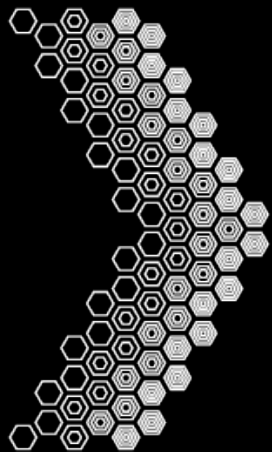


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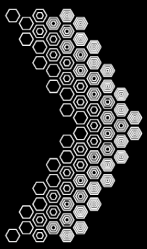
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And their Earth System Science Partnership



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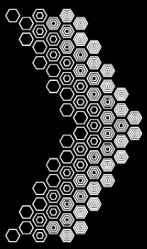
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Conference co-chairs, Lidia Brito
(UNESCO), Mark Stafford Smith (CSIRO)

- State of the planet
- Linking communities
- Solutions
- 3000 delegates

SCIENCE POLICY DEVELOPMENT INVESTMENT
INDUSTRY ENGINEERING TECHNOLOGY MEDIA



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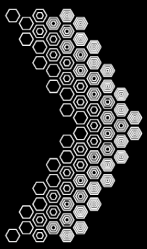
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Plenary talks & panels



- Drivers of GEC
- State of the planet
- Interconnected risks and solutions
- Governance
- Innovative solutions
- Planetary stewardship
- Youth engagement





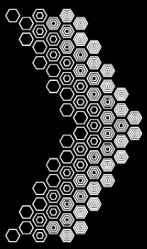
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Parallel sessions



- Sea-level rise
- State of world's cities
- Food security
- Earth system tipping points
- Ocean acidification
- Geoengineering
- Governing the global commons
- Nitrogen management
- Air pollution and climate change



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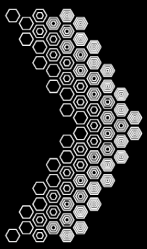
Industry



Aim: Long-term collaboration

- Board of Patrons
- Plenary, parallel
- Innovative approaches (participatory sessions)
- Post-conference follow-ups





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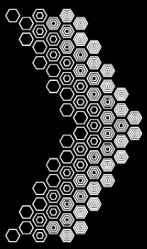
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Industry - successes

- New perspectives
- Dialogue
- Led panel discussions
- Positive feedback so far

- Volvo
- Shell
- Willis Re
- KPMG
- Rabobank
- Viridor
- Max Hamburgers
- Atkins



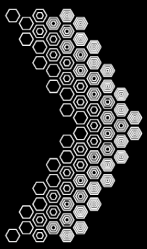


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Industry - challenges

- Primarily a science conference
- Not engaged from outset
- Plenary slots most attractive
- Long-term engagement in context of Future Earth transition
- Resources for engagement



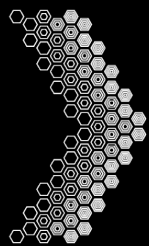
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Developing country scientists






























- Raised £500 k
- 200 scientists funded

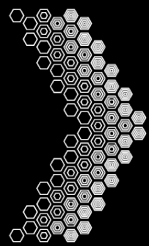


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STATE OF THE PLANET DECLARATION

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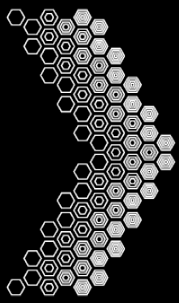


And their Earth System Science Partnership

We are now a prime driver of change at the planetary level

We have entered the
ANTHROPOCENE





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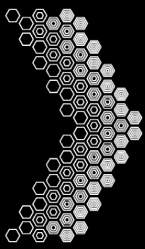
- The Earth is a complex, interconnected system
- Susceptible to abrupt and rapid changes
- Running out of time
- Interconnected solutions



RIO+20

United Nations
Conference on
Sustainable
Development





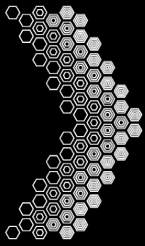
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GLOBAL SUSTAINABILITY PANEL



“Governments and the scientific community should take practical steps, including through the launching of a major global scientific initiative, to strengthen the interface between policy and science.”



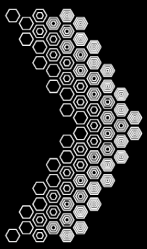
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FUTURE EARTH

A new contract between science and society



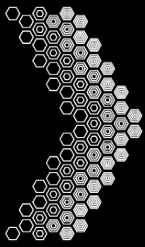
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Policy

- State of the planet declaration
- **LARGEST** gathering of global-change scientists before **RIO+20**
- 9 policy briefs





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The New York Times

6 | FRIDAY, APRIL 6, 2012

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ROMNEY'S BURDEN

Romney is closing in on the nomination, but can he climb out of the "severely conservative" hole he dug for himself?

Mitt Romney's three primary victories on Tuesday probably shed off what little oxygen remained for the campaigns of his rivals for the Republican nomination. His nearly insurmountable lead does not justify efforts by party elders to push Rick Santorum and Newt Gingrich out of the presidential race. But it does mean that Mr. Romney is starting to try to climb out of the "severely conservative" hole he dug for himself during the first three months of primaries.

His problem is that wherever he goes, he will be followed by those extreme positions and careless statements, and others he made to get to the front of the pack. Campaigning in Wis-

The greatest challenge of our species

Thomas Lovejoy

Human ingenuity is up to the challenge of saving the Earth, but we need to act now.

In a cavernous London conference center so devoid of life as to seem a film set for "The Matrix," 2,000 scientists, officials and members of civil society organizations met in the last week of March to consider the state of the planet and what to do about it.

The Planet Under Pressure conference is intended to feed directly into the "Rio-20" United Nations Conference on Sustainable Development this coming June, 20 years after the Earth Summit in Rio convened the largest number ever of heads of state and produced, among other things, two international conventions, one for climate change and the other for biological diversity.

While it is not as if nothing has been achieved in the interim or that scientific understanding has stood still, it is obvious that new science is not needed to conclude that humanity has failed to act at the scale and with the urgency needed.

In the United States, in particular (but not exclusively), far too much attention has been given to the non-issue of whether climate change is real or not. In the meantime the heating of the atmosphere proceeds inexorably; the Arctic ice has thinned and retreated at its summer low to a point that might be tied to the exceptionally warm spring in Europe and North America. Spring bloom has erupted early in North America and Europe. Most people just say: how nice the weather is with no sense of the march of climate change.

Since the industrial revolution, developed nations have contributed significantly to the atmospheric burden of greenhouse gases. That led to a two-tier arrangement in the Kyoto Protocol, originally adopted in 1997, basically giving time to developing countries to improve their economies before taking major action.

The response of the United States at the time was to abdicate its traditional leadership position with a Senate vote based on the myopic notion that there was no point in doing anything if China and India were to keep on building coal-fired power plants. In the meantime, China is making measurable progress



DAVID M. HARRIS/AP

in decarbonizing its economy and has become the largest producer of solar panels in the world.

But the issue before humanity is, in fact, bigger than fossil fuel combustion, and far bigger than climate change. The Stockholm Environment Institute summed it up nicely in an analysis that identified a planet departing from planetary boundaries in three ways: climate change, nitrogen use and loss of biodiversity.

The use and frequent overuse of nitrogen fertilizer primarily by industrialized agriculture has polluted streams and lakes, and, in turn, coastal waters around the world. The resulting dead zones in coastal waters and estuaries are devoid of oxygen and largely devoid of life. They have doubled in number every decade for four decades — an increase by a factor of 16. The amount of biologically active nitrogen in the world is twice the natural level.

The greatest violation by far of planetary boundaries is in biological diversity. This is because, by definition, all environmental problems affect living systems; biological diversity integrates them all. Running down our biological capital is pure folly.

The planet works as a biophysical system that moderates climate (global, continental and regional) and creates soil and its fertility. Ecosystems provide a variety of services, not the least of which is provision of clean and reliable water. Biological diversity is the essential living library for sustainability. Each species represents a unique set of solutions to a set of biological problems, any one of which can be of critical importance to the advance of medicine, to pro-

ductive agriculture, to the biology that provides current support for humanity, and, most importantly, will provide solutions to the environmental challenge.

Looking ahead, we not only have to deal with these planetary-scale problems but also find ways to feed and produce a decent quality of life for at least two more billion than the seven billion people already here. We need to do this without destroying more ecosystems and losing more biological diversity. Human ingenuity should be up to the challenge. But it has to recognize the problem and address it with immediacy and at scale.

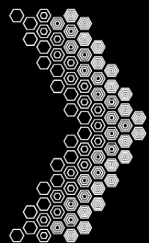
An important step, a "Future Earth" organization, was announced at the conference. It will bring all the relevant scientific disciplines together to work on this, the greatest challenge in the history of our species. This is essential because many physical scientists seem blind to the importance of biology in how the living planet works, and how it can provide critical solutions. Economics and social sciences are critical as well.

History will measure the impact of the Planet Under Pressure conference and the extent that Rio-20 rises to the challenge. The moment has come to realize that this planet which brought us into existence must be managed as the biophysical system that it is. It is time to get our hands on the steering wheel, not to save the planet but to keep it habitable.

THOMAS LOVEJOY is professor of science and public policy at George Mason University and biodiversity chairman at the H. John Heinz III Center for Science, Economics and the Environment.

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- 23 countries
- 15 languages
- Long lasting after conf.
- New York Times, Financial Times, International Herald Tribune, O'Globo, Hindu Times, BBC, Reuters, Sunday Times, Sun, Wall Street Journal....,

Toward universal health coverage



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SCIENCE AND GOVERNMENT

Navigating the Anthropocene: Improving Earth System Governance

F. Biermann,^{1,2*} K. Abbott,³ S. Andresen,⁴ K. Bäckstrand,⁵ S. Bernstein,⁶ M. M. Betsill,⁷ H. Bulkeley,⁸ B. Cashore,⁹ J. Clapp,³ C. Folke,^{10,11} A. Gupta,¹² J. Gupta,¹³ P. M. Haas,¹⁴ A. Jordan,¹⁵ N. Kanie,^{16,17} T. Kluvánková-Oravská,¹⁸ L. Lebel,¹⁹ D. Liverman,^{20,21} J. Meadowcroft,²² R. B. Mitchell,²³ P. Newell,²⁴ S. Oberthür,²⁵ L. Olsson,² P. Pattberg,² R. Sánchez-Rodríguez,^{26,27} H. Schroeder,¹⁵ A. Underdal,²⁸ S. Camargo Vieira,²⁹ C. Vogel,³⁰ O. R. Young,³¹ A. Brock,³ R. Zondervan²

Science assessments indicate that human activities are moving several of Earth's sub-systems outside the range of natural variability typical for the previous 500,000 years (1, 2). Human societies must now change course and steer away from critical tipping points in the Earth system that might lead to rapid and irreversible change (3). This requires fundamental reorientation and restructuring of national and international institutions toward more effective Earth system governance and planetary stewardship.

We propose building blocks of such a new institutional framework, based on a comprehensive assessment conducted in 2011 by the Earth System Governance Project, a 10-year social science-based research program under the auspices of the International Human Dimensions Programme on Global Environ-

mental Change (IHDP) (4, 5). The assessment has been designed to contribute to the 2012 United Nations (UN) Conference on Sustainable Development in Rio de Janeiro, which will focus on the institutional framework for sustainable development and possible reforms of the intergovernmental governance system.

The assessment revealed remaining differences of opinion among social scientists, as well as an increasing consensus in many areas. As a general conclusion, our work indicated that incremental change (6)—the main approach since the 1972 Stockholm Conference on the Human Environment—is no longer sufficient to bring about societal change at the level and with the speed needed to mitigate and adapt to Earth system transformation. Structural change in global governance is needed, both inside and outside the UN system and involving both public and private actors.

To this end, decision-makers must seize the opportunity in Rio to develop a clear and ambitious roadmap for institutional change

The United Nations conference in Rio de Janeiro in June is an important opportunity to improve the institutional framework for sustainable development.

ment, science assessment, and capacity-building (8–10).

Second, it is crucial to strengthen the integration of the social, economic, and environmental pillars of sustainable development, from local to global levels. The UN Commission on Sustainable Development (CSD) was created in 1992 for this purpose. Yet its political relevance as a subbody to the UN Economic and Social Council has remained limited. Governments must now take action to improve the integration of sustainable development policies. In our view, the CSD must be replaced by a new mechanism that stands much higher in the international institutional hierarchy. The most promising route is creating a high-level UN Sustainable Development Council directly under the UN General Assembly (11). To be more effective, such a council should rely not on traditional UN modes of geographical representation, but give special predominance to the largest economies—the Group of 20—as primary members that hold at least 50% of the votes in the council. Only such a strong novel role for the Group of 20 will allow the UN Sustainable Development Council to have a meaningful influence in areas such as economic and trade governance. The countries that cooperate in

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WORLD VIEW

A personal take on events



Change the approach to sustainable development

Conventional environmental assessments are not enough — it is time for some joined-up global thinking, says Mark Stafford Smith.

As the world heads towards the next big environmental summit—the United Nations Conference on Sustainable Development (Rio+20) in Rio de Janeiro, Brazil, in June—officials and politicians are calling for further assessments of our global ecological plight.

In January, for example, a panel on global sustainability set up by UN secretary-general Ban Ki-moon recommended a "periodic global sustainable development outlook report that brings together information and assessments currently dispersed across institutions and analyses them in an integrated way".

This is a response to research that shows how global society is increasingly interconnected and interdependent. The cascading effect on land availability and food security of a switch to biofuels, for example, demonstrates how actions to address carbon dioxide emissions can rebound on other goals.

But, in these difficult times, can the thinly stretched scientific community support a new assessment process? And is that really what policy-makers need from research?

Scientists are already busy on policy-makers' behalf. There is the Intergovernmental Panel on Climate Change (IPCC), the Millennium Ecosystem Assessment, assessments of international waters, mountains and fresh water, the Global Marine Assessment and the important new Intergovernmental Platform on Biodiversity and Ecosystem Services. Each has a crucial role in consolidating knowledge about individual sectors. But how to connect the dots?

In many areas, the rates of global environmental change are accelerating but decision-making processes are stuck in low gear. It is not clear that another conventional assessment will catalyse swifter action. So, although the research community should rally behind an integrated analysis, it must be done differently.

First, the focus must shift from documenting problems to supporting solutions. This requires strong and continual interaction between those working in strategic applied research and decision-makers in

migration policy on environmental and social well-being, for example. To do this comprehensively, the research must also become more integrated, encompassing natural and social sciences and the humanities to understand the implications of changes.

How could this be done? Two proposals already on the table for Rio+20 could help: a UN Sustainable Development Council (UNSDC), directly answerable to the UN General Assembly, and a set of sustainable-development goals (SDGs).

A UNSDC could commission strategic analyses of global sustainability and set up and coordinate decision-specific panels—small mixed working groups that include non-scientific members, appointed to report quickly on specific issues. Such panels would work across sectors, independently from but jointly owned by global bodies such as the Food and Agriculture Organization of the UN, the World Trade Organization, the UN Environment Programme and the World Bank.

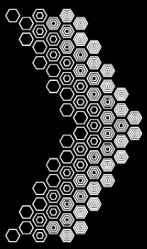
This model must be replicated at regional and national levels, driven by local needs, with local ownership. Light-touch coordination by the UNSDC would ensure good communication and exchange of ideas, and would make sure that activities in one region did not lead to perverse global outcomes—perhaps by causing people to move, distorting prices or over-using resources.

The SDGs could ensure that these activities integrate the three pillars of sustainability—environmental, economic and social—instead of dealing with each in isolation, as the UN's current Millennium Development Goals do. They should connect sectors, aiming for example to improve well-being without environmental damage, ensure food security without undermining local livelihoods and develop habitable urban environments without increasing resource use.

All of this builds on existing trends in the activities of bodies such as the IPCC, but we need a rapid step change in the evolving relationship between science and decision-making.

Countries such as Australia already talk about 'national innovation

THE FOCUS MUST
SHIFT FROM
DOCUMENTING
PROBLEMS
TO
SUPPORTING
SOLUTIONS.



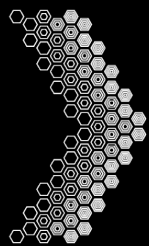
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Bridges to the future

- 11 Participatory sessions
- Science-policy interface, Sustainable Development Goals, industry-science links
- World café, Pro-action café, un-conference

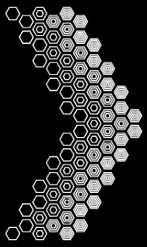


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- 150 Planet Under Pressure events in science and technology centers around the world reaching 12000 people
- Social media: 3000 online participants, interactive Q&A, reached 1 million through Twitter



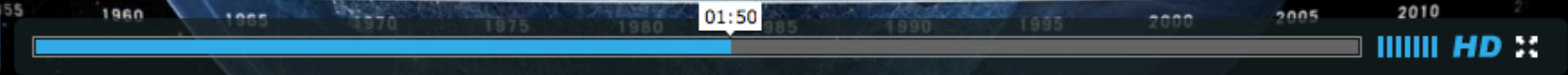
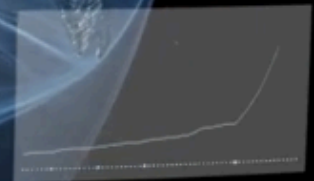
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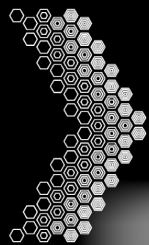


HD



Welcome to the Anthropocene

by WelcomeAnthropocene PLUS 1 month 3 weeks ago (via Final Cut Pro)



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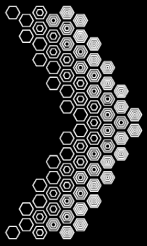
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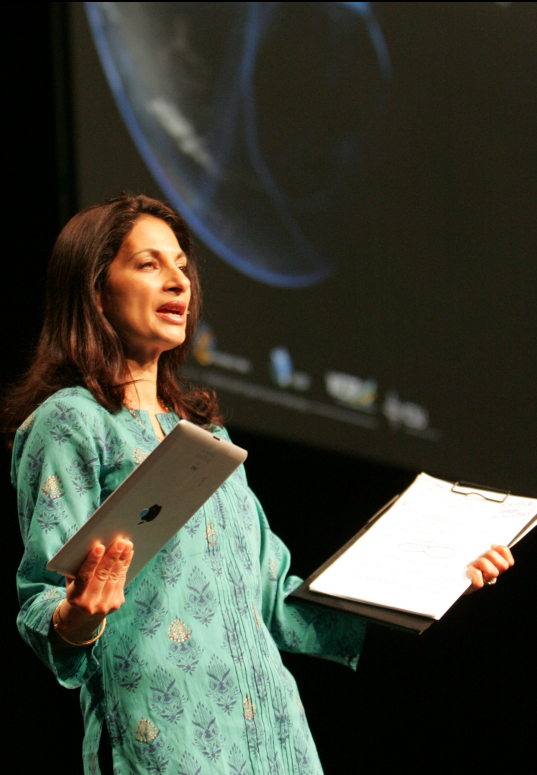


And their Earth System Science Partnership



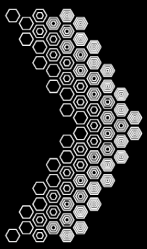
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Innovation

- Digital Q and A
- Professional moderator
- Social Media
- Broad engagement



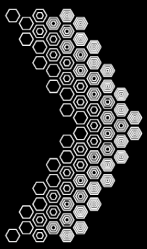
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Lessons learned

- Conference management company
- Funding
- Stronger industry links
- **Timing**
- Innovation is good

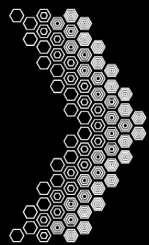


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PuP Post Conference Questionnaire

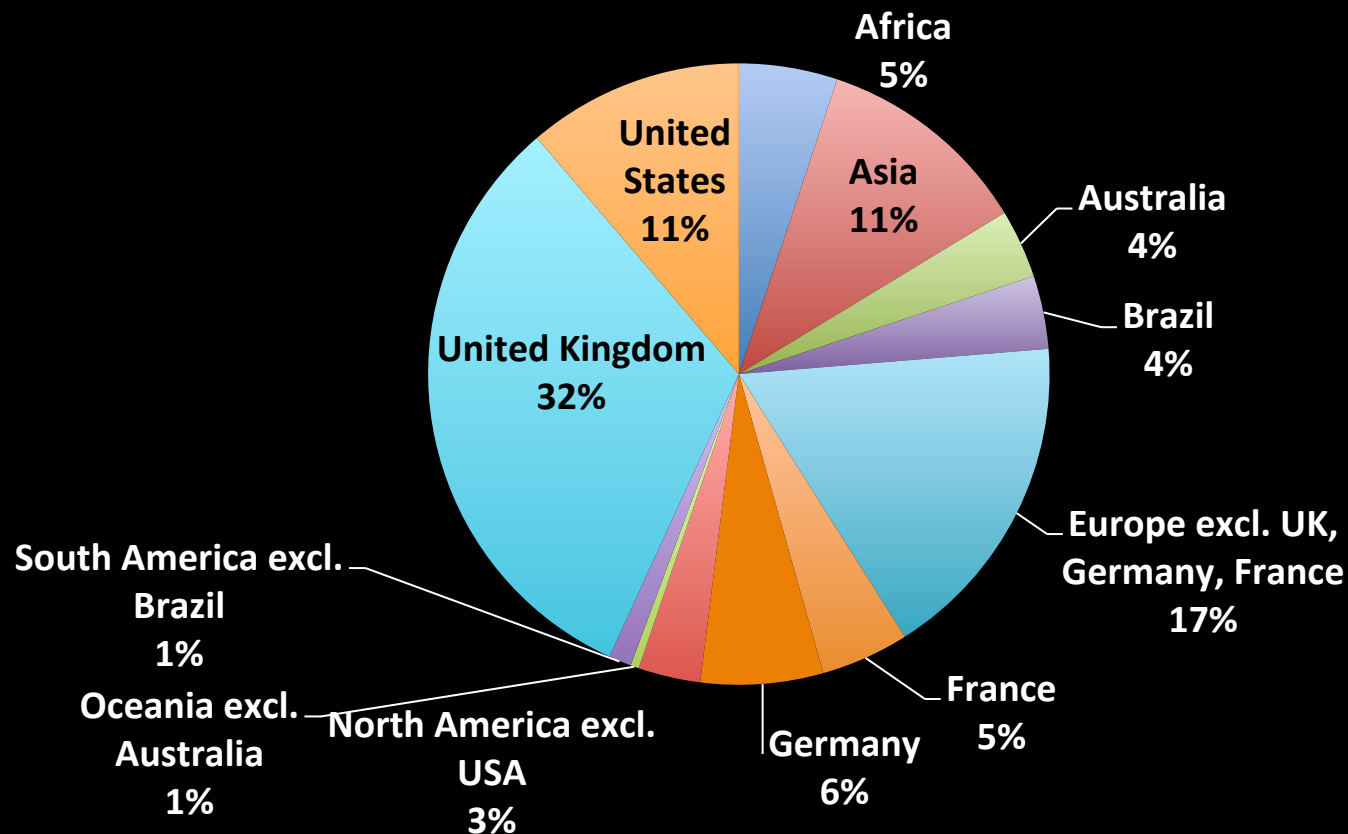
- conference was a success & the conference vision was achieved
- underrepresentation of some stakeholder groups, program too full, not enough solutions, panel discussions and plenary talks too short
- appetite to keep the momentum going

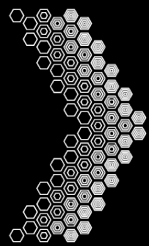


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PuP delegates by country and continent – total 2966

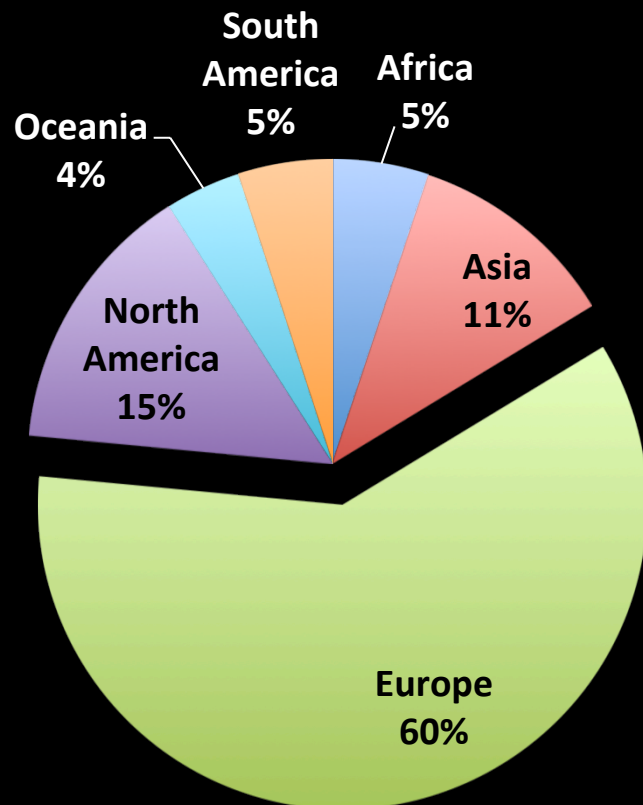




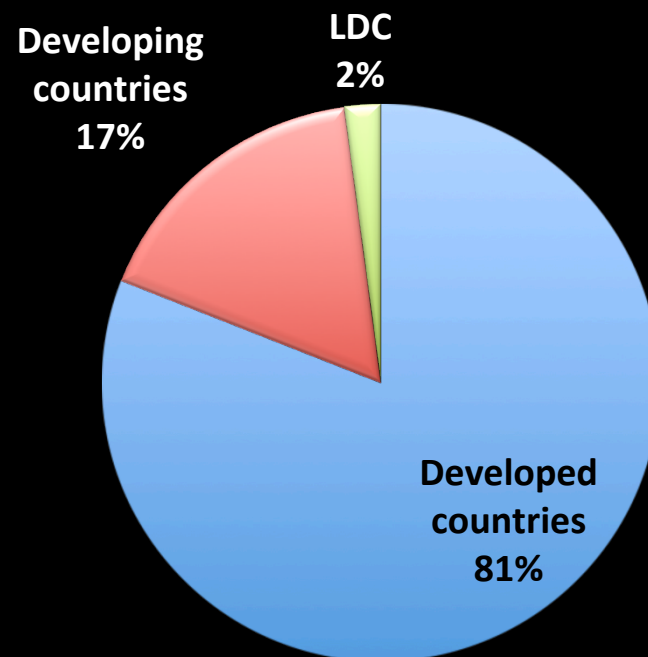
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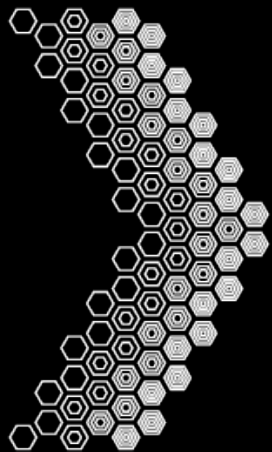
PuP delegates by continent



Developed/developing countries



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And their Earth System Science Partnership