

Dear readers,

Our Executive Director Klaus Töpfer recently observed that “2015 should really be called the year of sustainability.” But we’ll only be able to judge how apt that description is in a few months time. A crucial step will be taken in September, when the UN General Assembly will decide for the first time on global sustainable development goals (SDGs). The IASS and its partners have contributed to the negotiation process by putting forward proposals on how best to implement the SDGs. This research area at the IASS is one theme of this newsletter, in addition to the question of how the German Energiewende can contribute to the spread of renewables across the globe, reconstruction efforts in Nepal, and protecting the deep sea from the run on resources.

With best regards,
IASS Press & Communications Team

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NEWS FROM THE IASS



What can be done to make the Sustainable Development Goals Sustainable?

The countdown has started: the UN General Assembly will meet from 25 to 27 September to agree for the first time on global sustainable development goals (SDGs). The IASS is helping to shape the Post-2015 Development Agenda, for example with its proposals for a land-degradation neutral world and more sustainable use of biomass. Together with other organisations, it is advocating an integrated approach to the implementation of the SDGs, which takes the interdependencies between the different goals into consideration. **Read more...**



Climate Engineering not an Option for Near-term Climate Policy

Greenhouse gas removal and albedo modification techniques cannot be counted on to contribute to reducing climate change within the next decade or decades. Targeted interventions in the climate (known as ‘climate engineering’ or ‘geoengineering’) are not a substitute for reductions in CO₂ emissions and adaptation strategies to the negative consequences of climate change. These were some of the main conclusions of the report on the *European Transdisciplinary Assessment of Climate Engineering* (EuTRACE). **Read more...**



Citizen Participation is Important for the Energiewende – Results of a Survey of Local Utilities

Municipal and regional energy providers recognise the importance of citizen participation for the success of the Energiewende. This is confirmed by the results of a survey conducted by the IASS and the Association of Local Public Utilities (VKU) in March 2015 among VKU local utilities. The vast majority of the respondents (91%) believe that citizen participation is “important” or “very important” for the success of the Energiewende. Of the 765 enterprises to which the survey was sent, around 100 (13%) participated. **Read more...**

NEWS FROM THE IAASS

Energiewende

How Can the Internationalisation of the Energiewende Succeed? Expert Discussion at IAASS

Germany has pioneered the use of renewable energy sources in the last 20 years. A commitment to renewables is an important element of Germany's foreign policy. But where should the focus of future efforts to export the Energiewende lie? And how can we intensify and improve cooperation with international partners? These and other questions were discussed at the workshop "Advancing an international Energiewende policy: Lessons from North Africa", which was hosted by the IAASS, the German Institute for International and Security Affairs (SWP) and the German Development Institute (DIE) on 29 June. **Read more...**

Oceans

Deep-sea Mining and the Protection of the High Seas

We use our oceans intensively and in many different ways: some researchers estimate that half of the world's oceans are already adversely affected by waste, pollutants, overfishing and other human interventions. At the same time, more and more countries and firms are keen to tap into the resources of the deep sea. It's clear that we need to change course if we are to reconcile our steadily growing appetite for marine resources with the goal of marine protection. How can we meet the new challenges posed by activities like deep-sea mining? And how can we protect the oceans in the process? These questions were the focus of events in Berlin and Brussels organised by the IAASS and its partners in the spring of 2015. **Read more...**

Soils

Global Soil Week: The Role of Fertile Soils for Sustainable Development

Six hundred participants from eighty countries met in Berlin for the third Global Soil Week from 19 to 23 April to discuss and develop ways to attain sustainable soil management and responsible land governance. The motto of this year's event was "Soil. The Substance of Transformation." The IAASS and its partners hosted this unique international, multi-stakeholder science-policy platform in the International Year of Soils. In various dialogue formats, policymakers, scientists from many different disciplines, experts, farmers and stakeholders from civil society formed a diverse knowledge platform and contributed to political processes dealing with soils as a key resource in the sustainable development goals (SDGs). Discussions focussed on options for rehabilitating soil, sustainable land management and land governance.

Read more...

IASS PUBLICATIONS



Working Paper: **The Role of Biomass in the Sustainable Development Goals: A Reality Check and Governance Implications**, Alexander Müller, Jes Weigelt, Ariane Götz, Oscar Schmidt, Ivonne Alva, Ira Matuschke, Ulrike Ehling, Tim Beringer (IASS).

NEWS FROM THE IAASS

Institute

Cutting-edge Science for a Sustainable Society: IAASS Bids Farewell to Scientific Director Carlo Rubbia

After five years as Scientific Director at the helm of the IAASS, Carlo Rubbia left his position at the end of May for new endeavours and to continue his research activities both in physics and renewable energy solutions. Rubbia, who was awarded the Nobel Prize in Physics in 1984, participated in the 2007 Potsdam Nobel Laureates Symposium “*Global Sustainability – A Nobel Cause*”, which led to the inception of the IAASS. He subsequently joined the newly founded IAASS in 2010 on a five-year mandate, which he has now completed. Alongside Klaus Töpfer, Rubbia launched the institute’s very first research projects.

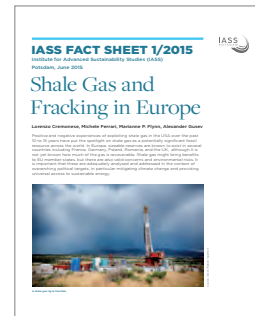
Read more...

Atmosphere

Rebuilding Nepal: IAASS Supports Cleaner Brick Production for Better Air Quality

South Asia stands out globally as a region that not only suffers from high exposure to air pollution, but is also extremely vulnerable to climate change and very poorly prepared to deal with its consequences. South Asia’s general lack of resilience to environmental problems was recently brought into focus by the major earthquakes in Nepal on 25 April and 12 May 2015. With the Climate and Clean Air Coalition (CCAC), the IAASS is actively contributing to the reconstruction effort on the ground. The institute has been a lead partner in the CCAC Brick Production Initiative since the autumn of 2014 and has just been appointed a lead partner in the CCAC Regional Assessment Initiative. **Read more...**

IASS PUBLICATIONS



4. IAASS Fact Sheet 1/2015: **Shale Gas and Fracking in Europe**, Lorenzo Cremonese, Michele Ferrari, Marianne P. Flynn, Alexander Gusev (IAASS).



Working Paper: **The History, Impact and Limits of Economic Expertise**, Anna Barbara Sum (IAASS).

SDGs

What can be done to make the Sustainable Development Goals Sustainable?



The UN General Assembly will agree on sustainable development goals in September.

© UN Photo/
Eskinder Debebe

The sustainable development goals (SDGs) will shape the political agenda of UN member states over the next 15 years. They will replace the millennium development goals (MDGs), which were adopted by governments in 2000 and are due to expire at the end of this year. The MDGs were primarily targeted at poor countries, which were supposed to achieve these goals with financial aid from wealthy states. This model failed to recognise that the economic models of 'developed' countries are also in dire need of revision. Because in terms of their use of natural resources, these countries have been living beyond their means for a long time. That is why in the run-up to the Rio+20 Summit in 2012, Guatemala, Peru and Columbia recommended that sustainable development goals be formulated and recognised by all countries as a mandate for action. These goals were to become one of the few tangible results of Rio+20.

A UN Open Working Group was established to formulate the SDGs. In parallel, a broad consultation process was conducted at international level via the platform worldwewant2015.org and in national dialogues. At the urging of the IAASS and its partners, the final declaration of the Rio+20 Summit underlined the importance of protecting soils. This is also reflected in the SDGs currently on the table in the formulation that member states should strive towards a land-degradation neutral world.

Together with its partners, the IASS has been developing proposals for how to achieve this goal since 2012. With the support of the Federal Ministry of Food and Agriculture, it has been playing an increasingly active role in discussions to shape the Post-2015 Development Agenda. Given the huge importance of natural resources for the SDGs, researchers at the institute investigated just how sustainable the proposed goals are. They analysed the 17 proposed SDGs from the perspective of the sustainable production of biomass. This allows for an approach to the SDGs that goes beyond purely sectoral considerations – for example, combating hunger and protecting the environment. Biomass can be used as food and feed, in the production of bioenergy, and in other industrial processes. Germany has committed to using biomass sustainably, not least in the context of its bioeconomic strategy. The analysis shows that the level of biomass production required by the SDGs necessitates land use on a scale that could hinder the realisation of the goals: the land demands made in the SDGs exceed our existing land resources.

In the negotiation process, the IASS and other organisations are therefore recommending that an integrated approach be taken to the implementation of the SDGs. ‘Integrated’ does not mean that the number of the SDGs should be reduced, but rather that consideration be given to interdependencies and possible trade-offs between the goals. After the adoption of the SDGs in September, the IASS will play an active role in the implementation of the goals in and by Germany.

For further information, see:

- **Proposal of the IASS Global Soil Forum and partners: Soils and Land in the SDGs and the Post-2015 Development Agenda**

IASS PUBLICATIONS



Dossier: **Grounding the Post-2015 Development Agenda: Options for the Protection of our Precious Soil and Land Resources**; IASS Potsdam, Biovision, CIAT et al.



Issue Brief: **Towards an Integrated and Inclusive Follow-up and Review of Natural Resources**; IASS Potsdam, Millennium Institute, Biovision et al.

Climate

Climate Engineering not an Option for Near-term Climate Policy



It is not yet clear whether it would be possible to develop and scale up any proposed climate engineering technique to the extent that it could be implemented to significantly reduce climate change. The study also suggests that it is uncertain whether the costs and impacts on societies and the environment associated with individual techniques would be considered acceptable in exchange for a reduction of global warming and its impacts, and how such acceptability or unacceptability could be established democratically. While it is sensible to continue to investigate climate engineering techniques to understand what potential they might have for partially counteracting climate change in the second half of this century and beyond, as well as to understand what kinds of effects they would then have on societies and the environment, it is imprudent to expect the various climate engineering techniques to play a significant role in climate policy in the next decade or even within the next several decades.

“It is important to understand the possibilities and problems associated with climate engineering proposals, in order to make decisions on them in a responsible manner. But it would be irresponsible, based on all we know so far, to expect climate engineering to significantly contribute to solving the problem of climate change in the next several decades. We will only be able to limit the effects of climate change if all states commit to drastically reducing their CO₂ emissions, at the Climate Summit in Paris and beyond, following through on that commitment in the years thereafter,” stressed Professor Mark Lawrence,

Climate Engineering
is no substitute for
reducing CO₂ emissions.

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istock/1xpert

project coordinator of EuTRACE and Scientific Director of the IASS Potsdam. EuTRACE was funded by the EU and brought together researchers from 14 European partner institutions with a range of expertise on the topic of climate engineering.

Key assessment findings

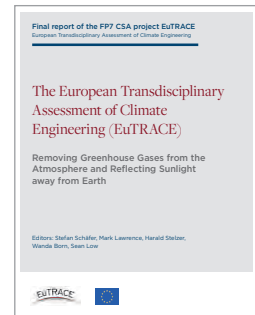
The assessment report provides an overview of the broad range of techniques that have been proposed for climate engineering, and what these can and cannot do. The report then illustrates many of the challenges and concerns associated with climate engineering, focusing especially on three example techniques: bio-energy with carbon capture and storage (BECCS), ocean iron fertilisation (OIF), and stratospheric aerosol injection (SAI). Research on climate engineering has thus far been limited, mostly based on climate models and small-scale field trials. This research has not only shown the potentials of greenhouse gas removal and possibly of albedo modification for partially counteracting climate change over the long term, but has also shown that there are many problems and challenges that would be associated with their implementation, not only in terms of costs, technologies and environmental impacts, but also in terms of societal impacts and the development of regulation and governance.

One **scientific challenge** that generally applies to techniques for both greenhouse gas removal and albedo modification is understanding how their application could result in numerous harmful impacts on ecosystems, many of which are presently uncertain or unknown. Many other scientific and technical challenges are more specific to one of the two broad categories:

Greenhouse gas removal techniques face numerous scientific and technical challenges, including:

- determining whether the techniques could be scaled up from current prototypes, and what the costs of this might be;
- determining the constraints imposed by various technique-dependent factors, such as available biomass;
- developing the very large-scale infrastructures and energy inputs, along with the accompanying financial and legal structures, that most of the proposed techniques would require; based on existing knowledge and experience, it could take many decades before any technique could have a significant impact on global CO₂ concentrations.

IASS PUBLICATIONS



The European Transdisciplinary Assessment of Climate Engineering (EuTRACE Report), Stefan Schäfer (IASS), Mark Lawrence (IASS), Harald Stelzer (IASS) (eds) et al.

Proposals for cooling the Earth's surface by increasing the albedo –

the fraction of solar radiation that is reflected back to space – also face extensive scientific and technical challenges, so it is unclear whether any of the proposed techniques would ever be technically feasible. Some of the challenges that would first need to be addressed include:

- very large and costly infrastructures that land-based techniques would require;
- delivery mechanisms for techniques based on injection of aerosol particles into the atmosphere, including delivery vessels (e.g., high-flying aircraft or tethered balloons) and associated nozzle technologies;
- a much deeper understanding of the underlying physical processes, such as the microphysics of particles and clouds, as well as how modification of these would affect the climate on a global and regional basis.

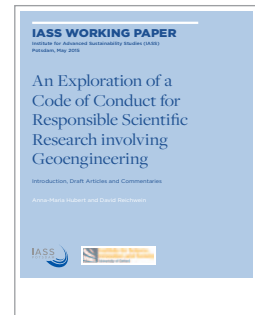
Societal context and development of governance and regulation

A major part of the EuTRACE assessment report was to highlight the possible effects of various climate interventions on human security, conflict risks and societal stability. At present, no existing international treaty body is in a position to broadly regulate greenhouse gas removal, albedo modification, or climate engineering in its entirety. The EuTRACE assessment therefore stresses the value of engaging the public in the discussion about climate engineering. It also suggests that EU member states could consider pursuing an agreement on a common position on various techniques or general aspects of climate engineering, especially if such an agreement could be made consistent with the high degree of importance that EU primary law places on environmental protection.

Further Information:

- **EuTRACE Website**

IASS PUBLICATIONS



Working Paper: **An Exploration of a Code of Conduct for Responsible Scientific Research Involving Geoengineering**, Anna-Maria Hubert (IASS) and David Reichwein (IASS).

Energiewende

Citizen Participation is Important for the Energiewende – Results of a Survey of Local Utilities



The survey revealed that almost half of the respondents have made efforts to involve citizens in the planning, construction and operation of infrastructure projects in the energy sector in the last decade, particularly in the areas of solar (67%), wind energy (35%) and biomass (28%). IASS Executive Director Klaus Töpfer sees this as a positive signal: “It’s great news that half of the enterprises surveyed already have experience of involving citizens in the Energiewende and view this as ‘important’ or ‘very important’. It’s only through this kind of participation that the Energiewende will continue to progress as a collaborative endeavour. At the same time, the Energiewende is also the arena in which forms of citizen participation can be tried and tested.”

For VKU Managing Director Hans-Joachim Reck, the Energiewende is a mammoth infrastructural undertaking that requires the involvement of all parts of society. “This undertaking is technically complex and necessitates interventions in the landscape, for example, the construction of renewable energy installations and power lines. The people living the vicinity of such interventions need to make concessions. Citizen participation helps us to find joint solutions that everybody can accept through dialogue,” he explained.

The survey sought to gauge the importance of citizen participation for the Energiewende and gather real experiential values for the planning and implementation of infrastructure projects in the energy sector. The definition of citizen participation in the first part of the survey was kept deliberately broad in an attempt to gather data on forms of

The DEMOENERGY project explores how citizen participation in the Energiewende can succeed.

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Norbert Michalke

financial participation (e.g. savings bonds) as well as more informal manifestations of citizen participation that are not regulated in law. Another section of the survey homed in on common practice in informal citizen participation, for example, round tables, future conferences and public meetings. As Ina Richter, a researcher for the DEMOENERGY project at the IASS, stressed, "Given the extent of informal public participation, it is more important than ever to learn more about how the participatory processes initiated by enterprises are understood and work in practice. To date, we have hardly any information about this."

In another interesting result, the survey shows that for 86% of the surveyed enterprises, the decision to involve citizens in planned infrastructure projects in the energy sector was made on their own initiative. Almost half of the respondents (48%) claimed that the municipality as proprietor played a major role in their decision. And only around a fifth of the enterprises cited financial reasons for their decision to involve citizens in such projects. The respondents also indicated that they expect that the initiative shown by enterprises and decisions made by local utilities will continue to be the main factors behind citizen participation in the future.

The VKU is a partner of the project "DEMOENERGY – The Transformation of the Energy System as a Driver of Democratic Innovation", which is funded by the Federal Ministry of Education and Research and currently being carried out by the IASS in cooperation with the Institute for Advanced Study in the Humanities (KWI). The project investigates how citizens can take an active part in shaping the Energiewende, not just through forms of financial participation, but also through dialogue-based citizen participation.

Energiewende

How Can the Internationalisation of the Energiewende Succeed? Expert Discussion at IASS



Wind turbines in Morocco. There is strong political support for an energy transition in the North African country.

© istock/
VerdeeProduction

In its development cooperation, Germany has been promoting the adoption of renewable energies in North Africa and other parts of the world for around 30 years. In 2014 alone, it provided more than 3 billion euro for this purpose and it currently provides more bilateral development aid for energy projects than any other country. At the beginning of the workshop, Sebastian Helgenberger, head of the Transdisciplinary Panel on Energy Change at the IASS, stressed the importance of looking beyond national borders, not least to support efforts in one's own country: "The German Energiewende will only succeed if it contributes to making the global economy independent of fossil-based energy sources that are harmful to the climate."

The workshop focussed on North African countries, which rely mainly on fossil fuels for their energy needs. Subsidies for oil and gas are very common there. "So there are vested interests that hinder a wider uptake of renewable energy sources. Yet, in some countries there is strong political support for an energy transition," explained Mike Enskat, Senior Programme Manager at the German Agency for International Cooperation (GIZ). For example, the German Government has established bilateral energy partnerships with Morocco and Tunisia. Nurzat Myrsaliev from the Regional Center for Renewable Energy and Energy Efficiency in Cairo pointed out that many North African countries have created incentives for private investment in renewable energy in recent years: "It is important that countries focus their efforts on ensuring the functionality of these schemes, particularly through streamlining administrative procedures and providing better

institutional support to the private sector.” She also stated that job creation can give an additional boost to the energy transition.

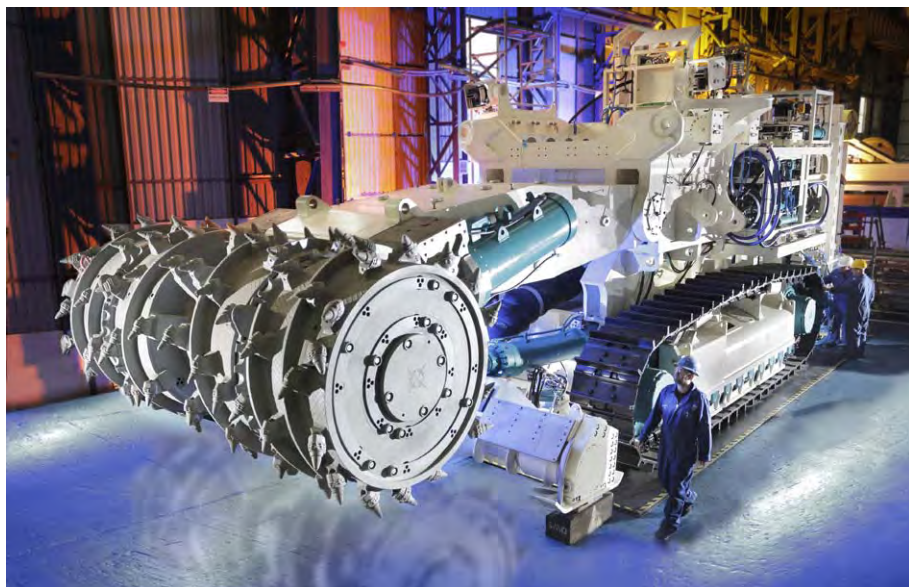
All the workshop participants – 67 representatives of politics, commerce, science and civil society – were agreed that for a successful international Energiewende, it’s not enough that Germany sets a good example. For the economist and political scientist Sybille Röhrkasten (IASS), internationalisation is not just about Germany imparting its knowledge, but also listening and learning from the experiences of other countries. She is convinced that a critical examination of past mistakes is also essential for future activities: “To reinforce Germany’s international Energiewende policy, it’s important to evaluate the efforts made so far and see what has worked and what hasn’t.” The Transdisciplinary Panel on Energy Change at the IASS conducts research on current issues in relation to the international dimension of the Energiewende, including the opportunities for using renewable energy sources in arid regions (water-energy nexus) and the economic potential of renewables in national and global value chains.

Further information:

- **TPEC website**
- **The Water-Energy Nexus: Seeking Integrated Solutions: blog by Sybille Röhrkasten**
- **Solar Energy in Germany and China: Dynamics of a Policy-driven Market: blog by Rainer Quitzow**
- **Interview with Kandeh Yumkella on Sustainable Energy and Societal Prosperity: blog by Sebastian Helgenberger**

Oceans

Deep-sea Mining and the Protection of the High Seas



A rotary cultivator for deep-sea mining, which was developed by the Canadian firm Nautilus Minerals.

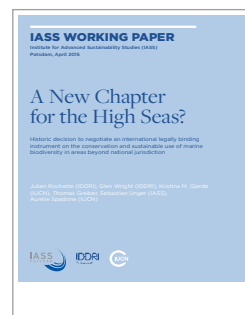
© Nautilus Minerals

Despite growing interest in deep-sea mining, there is still little understanding of the potential impacts of this activity on the environment, society and the economy. At a workshop on “Deep-Sea Mining: an Uncertain Future?” organised by the IAASS and GEOMAR - Helmholtz Centre for Ocean Research Kiel on 15 and 16 April in Berlin, experts discussed the most important unresolved questions about deep-sea mining: what degree of environmental harm would be acceptable? Who is entitled to exploit the resources of the deep sea? And who would the profits go to?

On 5 May, the German Marine Research Consortium (KDM) and the IAASS, together with the MEPs Gesine Meißner and Ricardo Serrão Santos, hosted a public discussion and an expert workshop titled “Towards a European Research Agenda for Ocean Governance” at Portugal’s Permanent Representation to the EU in Brussels. Around 100 participants from academia, EU institutions and NGOs discussed the interplay of current trends and marine protection challenges for politics, society and science.

Most participants of the workshop in Berlin agreed that environmental harm is inevitable in deep-sea mining. Side effects like the sediment plumes that result from mining and lifting the resources should be kept to an absolute minimum, so that the organisms that live on the ocean floor (e.g. corals, sponges) are not buried and mined areas can be recolonised. Overall, comprehensive regulation of deep-sea mining is needed. But this is easier said than done, because the international

IASS PUBLICATIONS



Working Paper: **A New Chapter for the High Seas?**; Historic decision to negotiate an international legally binding instrument on the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction, Julien Rochette (IDDRI), Glen Wright (IDDRI), Kristina M. Gjerde (IUCN), Thomas Greiber, Sebastian Unger (IASS), Aurélie Spadone (IUCN).

ocean floor is part of “man’s common heritage”. That means that the resources there belong to all states and are administered in accordance with UN regulations.

But apart from environmental and regulatory matters, the question of the profitability of deep-sea mining is also unclear at present. Some experts at the Berlin workshop asserted that such mining is not viable given the high investment required and stagnating metal prices. Others predicted that deep-sea mining will be an important sector in about 20 years time. But they too advocated slow-paced development in the light of countless uncertainties. Experiences of land-based mining and oil production suggest that an influx of income into a state’s economy can be a very mixed blessing, particularly for small and developing states. They can face an array of difficulties, many of which (metaphorically like a ‘curse’) may be unexpected. If these countries do not have well-functioning public institutions, the mining of natural resources could ultimately lead to lower growth rates, unfavourable social development and undemocratic political tendencies.

The participants of the Brussels workshop all agreed that the international community should establish policies and global standards before any mining of deep-sea resources goes ahead. Scientific research plays an important role in developing new approaches to the sustainable use of the oceans in collaboration with policymakers and society at large. Sebastian Unger, the head of the Ocean Governance research area at the IASS, explained that the goal here should be a knowledge-based and sustainable approach to the oceans. Protection and sustainable use are prerequisites for a thriving maritime industry in the long term.

To keep journalists and politicians informed about this issue, the IASS will publish briefings on various aspects of deep-sea mining in the coming months and integrate them into international processes concerned with deep-sea mining.

Further information:

- **Marine Policy Journal, Volume 49, November 2014 – IASS/IDDRI edited special section**
- **IASS Policy Brief (1/2013) Advancing Governance of the High Seas**
- **Gold at the Bottom of the Sea: Ours for the Taking? – blog by Jeff Ardron**
- **Deep-sea Mining: Possible but is it Permissible? – blog by Sabine Christiansen**

Soils

Global Soil Week: The Role of Fertile Soils for Sustainable Development



IASS Executive Director Klaus Töpfer: “Soil is the substance of transformation.”

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In the concluding plenary session on Wednesday, IASS Executive Director Klaus Töpfer stressed: “Soil really is the substance of transformation. Transformation is needed and it is possible in a way that integrates the voices of the poor into development.” Thomas Silberhorn, Parliamentary State Secretary to the Federal Minister for Economic Cooperation and Development (BMZ), one of the partners of the Global Soil Week, concluded: “Germany is doing a lot to make sure that humankind will not lose the very ground from under its feet. It will use its G7 presidency to encourage other partners to join the effort, because a world without hunger is not some distant dream. It would be possible today.”

In order to achieve the SDGs, the IASS proposed an integrated approach to their implementation at both national and international level. In the light of the decision on SDGs that will be taken by the United Nations in September and the COP 21 in Paris in December, the key conclusions of the Global Soil Week were:

- Sustainable soil and land management contribute to achieving several of the proposed sustainable development goals, such as food security, land degradation neutrality and an ambitious climate and biodiversity agenda.
- We need a consistent approach to implementing the SDGs and we must protect soils by investing in a holistic approach to sustainable soil management.

Fertile soils are the foundation on which our modern society is built. While we should be doing everything in our power to protect them, the reality is often very different. This is the subject of the new IASS film “**Better Save Soil**”.



- Investments in soil rehabilitation have various benefits, from food security to the mitigation of and adaptation to climate change.
- Soil protection and soil rehabilitation policies need to be based on a human rights framework, principally emphasising land rights for marginal and vulnerable groups in society.
- To make the transformational potential of the SDGs work, we need to set up institutions and processes at national level that will allow for a public debate on the post-2015 Development Agenda.

Black Plastic instead of a Green Lawn?



One hectare of fertile land is swallowed by building and transportation projects every 20 minutes in Germany alone. Fertile land is becoming scarcer across the globe, yet the demands we place on it are growing: we need it to grow food for more and more people; we build cities on it; and we are increasingly using it to grow animal feed and energy crops. These huge challenges for the future of humanity were the theme of the ONE HECTARE outdoor installation that the general public were able to experience from 26 April to 25 May in Berlin's Gleisdreieck Park as part of the Global Soil Week. At the opening of the installation, an area of one hectare was symbolically sealed. Colourful markings and other elements on the park green highlighted the competing ways in which we use soils. More information was provided in a container with a viewing platform. A varied accompanying programme with performance artists, films, installation objects and workshops made the vital role of soils tangible.

More information:

- [Global Soil Week website](#)
- [Coverage of the 3rd Global Soil Week by iisd Reporting Services](#)

**EIN HEKTAR
ONE HECTARE**

- [ONE HECTARE website](#)

Institute

Cutting-edge Science for a Sustainable Society: IASS Bids Farewell to Scientific Director Carlo Rubbia



Carlo Rubbia (centre) with Executive Director Klaus Töpfer (left) and Scientific Director Mark Lawrence (right)

© IASS

During the farewell ceremony, IASS Executive Director Klaus Töpfer expressed warm appreciation for Carlo Rubbia's contribution to establishing a new kind of institute focused on the role of civil society in science: "We started this courageous process together and I am extremely happy that in those days we were able to convince you to join us. That was really a breakthrough. We made a good effort to combine cutting-edge science with the question of the transformation and integration of society." Carlo Rubbia will maintain close ties with the institute as an Honorary Senior Fellow — an appointment that was already bestowed by the IASS upon Nobel Laureate Paul Crutzen. Hans Joachim Schellnhuber, Director of the Potsdam Institute for Climate Impact Research (PIK) and Deputy Chair of the IASS Strategy Advisory Board, emphasised in his farewell speech that innovation was always very important for Rubbia, saying: "You are an inventor. We should do everything to keep your legacy and all your achievements."

Carlo Rubbia's scientific background is long and diverse: after spending a large part of his career in the field of fundamental physics, he increasingly dedicated himself to finding solutions to the sustainability challenges of our times, and specifically to energy-related issues. As Scientific Director of the Earth, Energy and Environment research cluster at the IASS, he led research on the transformation of energy systems, a topic that has become one of the major research areas of the institute. A core component of this endeavour was focussed on the advancement of new technologies. For instance, together with CERN, the European Organization for Nuclear Research in Geneva, the IASS has developed a new concept for the electricity transmission

system of the future. Based on superconductivity, this new type of electricity line would provide benefits in terms of costs, efficiency and environmental impact, in response to the needs of a changing energy landscape. After passing the experimental phase, the IASS will continue this work as a member of the EU-funded “Best Paths” consortium. Similarly, other projects initiated by Rubbia investigate how to use natural gas for energy production without emitting CO₂, and how CO₂ could be turned from a liability into an asset. In each case, a crucial concern is to ensure that scientific findings are responsive to societal needs and transformation strategies. In this context, Rubbia’s contribution has always been key, allowing the IASS to establish important partnerships with relevant entities at the national and international levels. For example, part of his work on concentrated solar power involved reaching out to local and global actors to facilitate practical implementation strategies in sun-rich regions like South America. His participation in numerous high-level events and conferences provided an opportunity to publicise the research activities of the IASS and raise awareness of critical sustainability issues. In his five years as Scientific Director, Carlo Rubbia actively contributed to shaping and growing the IASS and now leaves a stronger and better-established institution.

Further information:

- **Website of the Earth, Energy and Environment research cluster**
- **E³ Brochure**
- **Dossier on superconductivity**

Atmosphere

Rebuilding Nepal: IASS Supports Cleaner Brick Production for Better Air Quality



IASS Scientific Director Mark Lawrence and colleagues set up scientific instruments to monitor atmospheric parameters in Lumbini in southern Nepal.

© Birgit Lode

Bricks, the main building material in Nepal, are in high demand for the post-earthquake reconstruction work. At the same time, nearly all of the brick kilns in the Kathmandu Valley were destroyed or significantly damaged by the earthquake. These brick kilns have historically been a large source of pollution from black carbon (the main component of soot), visible as black plumes emanating from the kilns' smoke stacks. Work is under way to ensure that, to the greatest extent possible, new brick kilns will be designed and built to produce higher quality, more earthquake-safe bricks in a less polluting and more energy efficient manner than their predecessors. These actions will hopefully lead to a reduction of harmful short-lived climate-forcing pollutants (SLCPs), in particular black carbon, in the Kathmandu Valley.

Promoting fast action on SLCP mitigation is the central goal of the CCAC, whose creation was motivated by a 2011 report that detailed a number of already available, cost-effective measures to reduce SLCPs. These measures, if applied globally, could avoid 2.5 million premature deaths, reduce crop losses by 52 million metric tonnes every year from 2030 onwards, and avoid 0.5 °C of global warming by 2050. Recognising that Asia's high levels of pollution and its vulnerability to climate change make it a particularly important region for taking action on SLCPs, the CCAC Regional Assessment Initiative has launched a new Asian Regional SLCP Assessment, which the IASS will co-lead as a new lead partner of the initiative. The Asian Regional SLCP Assessment aims to provide deeper insights into how to tackle SLCPs as part

of a more integrated approach to air quality and climate change policy in Asia, including the identification of the SLCP mitigation measures most relevant for Asia. The post-earthquake reconstruction efforts by the CCAC Brick Production Initiative are just one example of a case study that can inform the Asian Regional SLCP Assessment, which ultimately aims to identify priority measures for SLCP reduction that have the largest health, climate and development benefits at both regional and national levels.

As a leader of the Asian Regional SLCP Assessment, the IASS will provide project oversight and contribute scientific as well as regional expertise. IASS Scientific Director Mark Lawrence and Team Leader Maheswar Rupakheti have been involved with SLCP science for nearly a decade, notably in Asia, and the IASS is already actively engaged with air pollution issues in Asia through its projects Sustainable Atmosphere for the Kathmandu Valley (SusKat), BERLiKUM, and ELIAS. The IASS will further facilitate coordination and cooperation with relevant actors through its network of key regional stakeholders, including relevant ministries, scientific institutions, and think tanks. The IASS contribution to this assessment is led by Maheswar Rupakheti along with Birgit Lode, a member of the CCAC Steering Committee, and Kathleen Mar.

Further information:

- **IASS projects on air pollution in Asia: Sustainable Interactions with the Atmosphere in the Kathmandu Valley (SusKat), BERLiKUM, ELIAS**
- **CCAC Website**
- **UNEP Report: Integrated Assessment of Black Carbon and Tropospheric Ozone**

SELECTED PUBLICATIONS

Selected articles by IASS researchers in peer-reviewed journals
(2nd quarter of 2015)

Link:

■ IASS Publications

Bayer, B. (2015): "Current Practice and Thinking with Integrating Demand Response for Power System Flexibility in the Electricity Markets in the USA and Germany". - in *Current Sustainable/Renewable Energy Reports*, 2, 2, 55-62.

■ Doi

Clark, N. A., Ardron, J. A., Pendleton, L. H. (2015): "Evaluating the Basic Elements of Transparency of Regional Fisheries Management Organizations". - *Marine Policy*, 57, 158-166.

■ Doi

Jänicke, M. (2015): "Horizontal and Vertical Reinforcement in Global Climate Governance". - *Energies*, 8, 6, 5782-5799.

■ Doi

Lüthi, Z. L., Škerlak, B., Kim, S.-W., Lauer, A., Mues, A., Rupakheti, M., Kang, S. (2015): "Atmospheric Brown Clouds Reach the Tibetan Plateau by Crossing the Himalayas". - *Atmospheric Chemistry and Physics*, 15, 11, 6007-6021.

■ Doi

Plevan, M., Geißler, T., Abánades, A., Mehravaran, K., Rathnam, R. K., Rubbia, C., Salmieri, D., Stoppel, L., Stückrad, S., Wetzel, T. (2015): "Thermal Cracking of Methane in a Liquid Metal Bubble Column Reactor: Experiments and Kinetic Analysis". - *International Journal of Hydrogen Energy*, 40, 25, 8020-8033.

■ Doi

Svoboda, T., Irvine, P. J. (2015): "Response to Commentaries on Ethical and Technical Challenges in Compensating for Harm Due to Solar Radiation Management Geoengineering". - *Ethics, Policy and Environment*, 18, 1, 103-105.

■ Doi

von Schneidemesser, E., Monks, P. S., Allan, J. D., Bruhwiler, L., Forster, P., Fowler, D., Lauer, A., Morgan, W. T., Paasonen, P., Righi, M., Sindelarova, K., Sutton, M. A. (2015): "Chemistry and the Linkages between Air Quality and Climate Change". - *Chemical Reviews*, 115, 10, 3856-3897.

■ Doi

Xue, B. (2015): "Honing the Climate Change Message". - *Science*, 348, 872.

■ Doi

Yu, X., Geng, Y., Heck, P., Xue, B. (2015): "A Review of China's Rural Water Management". - *Sustainability*, 7, 5, 5773-5792.

■ Doi

NEW PROJECTS

ArcticABC – Applied technology, Biological interactions and Consequences for Arctic marine ecosystems in an era of abrupt climate change

Funding body: Norwegian Research Council

Duration: 2015 – 2019

Responsible person at the IASS: Dr Kathrin Keil

The interdisciplinary ArcticABC project combines the development of new technologies for data collection and analysis in the Arctic Ocean with research on the effects of climate change, in particular sea-ice reduction, on Arctic marine biology, and an analysis of possible consequences for the Arctic environment, living marine resources, and governance and geopolitics. The project is led by the University of Tromsø and is being carried out by a consortium of Norwegian and international partners. In its contribution to the project, the IASS will focus on Arctic governance, in particular in relation to fishing. The project links in with the research focus Sustainable Modes of Arctic Resource-driven Transformations (SMART).

Soil Protection and Rehabilitation for Food Security

Funding body: Federal Ministry for Economic Cooperation and Development, special initiative “ONEWORLD without Hunger”

Duration: 2015 – 2017

Responsible unit: Global Soil Forum at the IASS

This project is grounded in the observation that land degradation is increasingly threatening food security in the small-farming sector. While sustainable land management approaches are well known, they are usually only put into practice in the context of development projects, which are often limited to a short timeframe and do not have an effect beyond the project in question. Against this background, the project concentrates on finding mechanisms and processes to ensure sustainable land management that fosters food security. In line with the transdisciplinary approach, the project will consult with experts from the policy and practitioner communities.

It will be carried out in close cooperation with the German Agency for International Cooperation (GIZ). The partner countries of the project are Benin, Burkina Faso, Ethiopia, Kenya und India.

Link:

■ [project website](#)

IASS PEOPLE AND NEW APPOINTMENTS



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Profile [R. Andreas Kraemer](#)

In June 2015 the founder and long-time managing director of the Ecologic Institute began an 18-month fellowship at the IASS, which he is devoting to research on “Thinktanking in Theory and Practice”. Among other things, Kraemer investigates internal management and professional development in this sector, as well as transdisciplinary methods, like those used by the IASS and other institutes. In the course of his research, he will talk with representatives of different think tanks and refer to case studies to analyse the successes and failures of environmental think tanks in their efforts to encourage political measures towards sustainable development. The results of this research will feed into different activities and publications.

As a student of environmental sciences and environmental engineering at the Technical University Berlin and Université Paris Diderot, Kraemer already worked for various research institutes, including the Social Science Center Berlin and the Institute for Ecological Economy Research (IÖW). After graduating, he found a job at the Environmental Policy Research Centre (FFU) at Berlin’s Freie Universität. In 1991, he left the FFU for pastures new at the Institute for European Environmental Policy (IEUP) in Bonn. He founded the Ecologic Institute in 1995 and contributed to making it one of the world’s leading environmental think tanks in just a few years.

Stefanie Karuppan has been responsible for the area of finance/ third-party funding since 1 April. Prior to that she was employed as a case worker at LASA Brandenburg GmbH.

Dr. Serah Kiragu joined the IASS in May as a research associate for the accompanying research project “Soil Protection and Rehabilitation for Food Security”. Before that she worked as a specialist for resource management at the Finnish Embassy in Nairobi. Kiragu wrote her dissertation on “Adaptation to Climate Change by Agro-pastoral Communities in Kenya”. She has extensive experience of managing environmental conservation projects in East Africa.

Professor Karin Lochte, director of the Alfred Wegener Institute for Polar and Marine Research (AWI), was appointed chair of the IASS General Assembly in June. She succeeded **Professor Ernst Rietschel**, chairman of the Board of Directors of the Berlin Institute of Health, in this position. In recognition of his special contribution to the establishment of the institute, the IASS Management Board made Rietschel an Honorary Senior Fellow. Lochte’s deputy is **Dr Karl Eugen Huthmacher**, head of the division Provision for the Future – Basic and Sustainability Research at the Federal Ministry of Education and Research (BMBF).

Larissa Stiem joined the IASS in April 2015 as a research associate for the accompanying research project “Soil Protection and Rehabilitation for Food Security” with responsibility for field research in Burkina Faso and Benin. She holds an MSc in Environmental Studies and Sustainability Science. She has worked for various research institutes and NGOs in Ruanda and the Democratic Republic of Congo in the areas of agroforestry, subsistence farming and sustainable forestry.

UPCOMING EVENTS

August 2015

27 – 28 August 2015

Workshop: “Solar Radiation Management: Foresight for Governance – Workshop II” at the IASS; organised by the IASS (invitation only)

September 2015

1 – 2 September

Workshop: “Fugitive emissions in conventional and unconventional gas production in Europe” at the IASS; organised by the IASS (invitation only)

14 – 23 September

Potsdam Summer School 2015 on “Facing Natural Hazards”. Forty young scientists from around the world will discuss approaches to natural hazards with representatives of academia, government agencies, NGOs and the private sector and develop concrete solutions. Organised by the VIASS together with the University of Potsdam, GFZ, AWI, and PIK.

Contact: angela.borowski@iass-potsdam.de.

For further information, see:

- www.potsdam-summer-school.org

18 September

Public dialogue: “Different Urbanisations” – part 2 of the “Critical Dialogue Series: the New Urban Agenda ‘on the ground’”. Venue: ANCB The Aedes Metropolitan Laboratory, Pfefferberg, Berlin. Organised by the VIASS. The event will be conducted through English.

If you register beforehand, there is no charge for attending this event.

For further information, see:

- www.criticalurbanagenda.de

29 September

Berlin Expert Discussion on Globalisation: “The Global Energiewende as a Development Opportunity in the 21st Century”. Venue: KfW branch office in Berlin, Charlottenstr. 33A. Organised by the VIASS and the KfW. Starts at 6.30 pm. State Secretary Rainer Baake from the Federal Ministry for Economic Affairs and Energy, VIASS Executive Director Klaus Töpfer and other international experts will discuss what the German Energiewende means for international development and climate policy. Further information will soon be published on the VIASS website.

October 2015

7 – 9 October

Conference: “Deep-Sea Mining”. Venue: The Rockefeller Foundation Bellagio Center, Italy. Organised by: Commonwealth, the VIASS, Secretariat of the Pacific Community (SPC), University of California San Diego (UCSD). Themes: ecological, social and economic risks and advantages of the deep-sea mining programme (invitation only)

Link:

- [To the VIASS events calendar](#)



Join the discussion: how sustainable are the sustainable development goals? How can we meet the increasing demand for water and energy across the globe? What is the City of Potsdam doing to support sustainable urban development? Read the latest blogs penned by VIASS researchers!



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