



Second Global Session of the UN Science Policy Business Forum on the Environment

PROGRAMME

8-10 March 2019

About the Forum:

The UN Science Policy Business Forum on the Environment (UN-SPBF) aims to identify and promote opportunities for green investment that are driven by: advances in science and technology, empowering policies and innovative financing. Driven by this goal, the Forum is designed to strengthen the wider interface between science, policy, business and society by building consensus around key issues and by tearing down traditional barriers between these sectors. It is driven by a Governing Consortium composed of businesses, scientific institutes and policy makers.

One Year, Many Accomplishments

It has been an exciting first year for the UN Science Policy Business Forum on the Environment. We thank our partners for pioneering this unique solutions-based initiative and fast-growing platform, and our contributors and friends for their support.

Since its launch in **December 2017**, the Forum has established the foundations for important work-streams that are well aligned with the United Nations' work on the SDGs and that bring together diverse communities and contributions to inform policy-making and enrich understanding and collaboration.

In **May 2018**, the Governing Consortium's Meeting in New York set the stage for important discussions around technology and innovation now top on the agenda of the UN Environment Assembly and contribute to the theme around 'innovative solutions and sustainable consumption and production'.

In **September 2018**, the Forum was invited to inform the consultations of the Bureau of the UN Environment Assembly around the theme of innovation – joining hands with the Presidency of UNEA to lead a one day "Earth Innovation Forum" with Ministers and Members of the Assembly Bureau. We thank the Presidency and the Bureau for this unique opportunity.

In **October 2018**, the Forum organized an Extraordinary Session entitled "Laying the Foundations for a Global Digital Platform for Planetary Data using Frontier Technologies", in cooperation with the French Research Institute for Development (IRD), the French Research Alliance for the Environment (AllEnvi) and the Group on Earth Observations. Recommendations from this session on Big Data and Frontier Technologies is guiding the work of Environment Live and the UN Environment Situation Room. An international Working Group will be launched at the Second Global Session of the Forum to oversee this work.

In **2017**, we were proud to witness the first-ever global Citizen Science Alliance at the Forum's inaugural session in Nairobi. In 2018, we were proud to see the Alliance gain strength and we look forward to joining hands to support the establishment of the first digital platform for Citizen Science. We congratulate our Citizen Science pioneers on their perseverance and vision.

In **2019**, we are resuming our work with the convening of the Second Global Session of the Forum. We will also launch of the first UN backed Green Technology Startup Initiative as a first step towards supporting the growth of innovative solutions for the environment at a global scale.



Members of the Governing Consortium

UN Environment Programme, Presidency of the UN Environment Assembly, Philips / Signify, IBM, International Copper Alliance, Thomson Reuters, International Fertilizer Industry Association, European Space Agency, Tongji University, Society of Entrepreneurs for Ecology Foundation, the Belmont Forum, the World Economic Forum, the International Panel on Climate Change, the International Resource Panel, Climate and Clean Air Coalition, Global CEO Alliance, French Research Institute for Development (IRD) & French Research Alliance for the Environment (AllEnvi), International Alliance for Citizen Science.



Contributors

Google Earth Engine The Chinese Academy of Sciences, NASA Earth Science Division, ADEC Innovations; Sustainability Context Group, Reporting 3.0, Chinese Institute of Remote sensing and Digital Earth, The Woodrow Wilson Center for Scholars, Space Climate Observatory (SCO), Planet.com, PwC, Enel Foundation, The Group on Earth Observations (GEO), APPLia, ESRI, Descartes Labs, SmartMinds, CITES MIKE, Federal Institute of Hydrology, Germany, Central Dredging Association, GSTIC, World Association for Waterborne Transport, Future Earth, Carrefour Group, Orchid Group, World Academy of Sciences for Development, European Commission, the International Institute for Integrated Mountain Development, European University Institute, UNEP WCMC, American Association for the Advancement of Science, WWF, Global Energy Interconnection, UN Office of Human Rights, World Meteorological Organization, Enel Foundation.

For more information, please contact

Head of the Secretariat:

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Work Streams

This year's Global Session of the Forum focuses on the nexus of science, innovation and entrepreneurship for the environment, and covers the following five key streams:

1 Science Shaping Green Policies and Market Responses:

A review of the latest recommendations from flagship environmental assessments released before the UN Environment Assembly, and discussions around the required policy responses and actions by the private sector and key stakeholders.

2 Big Data: Towards a Digital Platform for Our Planet:

This stream builds on the Forum's Extraordinary session hosted by the French National Centre for Space Studies (CNES) in Paris on 18-19 October 2018 and organized in cooperation with the French Research Institute for Development (IRD), the French Research Alliance for the Environment (AllEnvi) and the Group on Earth Observations. This work stream will cover the following key tracks: Opportunities offered by Artificial Intelligence and Machine Learning, Big Data, Earth observations and remote sensing, Governance, Equity and Ethics, Financing.

3 Smarter, Greener Solutions for Cities:

By 2050, 70% of the human population will live in cities. Innovative technologies – from E-mobility to green buildings – need to be leveraged to maximize the efficient use of natural resources and encourage environmentally sound choices by all players across all sectors. We need to alter not only the physical design and infrastructure, but also to encourage positive resourcing decisions, behavior change and policy action.

4 Green Technology Startup Initiative:

Startups are not only transforming markets and economic growth; some are helping save the planet. Venture capital investment in Startups has surged to its highest level ever — \$148 billion last year alone. More than 40 Venture Capital backed companies achieved billion-dollar valuations and

joined the unicorn club. The UN Science Policy Business Forum is launching a pioneering programme to identify, communicate and shed light on the contributions of this fast-growing sector. The programme will act as an accelerator and incubator of Startup innovation for the environment as it examines the enabling policies and actions required to use such innovation to transform the world into greener and more sustainable living. The Green Technology Startup Initiative will showcase some ground-breaking innovations for the planet presented by Startups from around the world with in-depth sessions focusing on specific projects, financing and the policy support required to mainstream solutions and to bridge the technology divide.

5 Climate Challenge: Finance, Markets and Non-State Actors:

National pledges under the Paris Agreement will only bring a third of the reduction in emissions required by 2030 to meet climate targets, with private sector and sub-national action not increasing at a rate that would help close this worrying gap. This stream examines means of harnessing the power of finance, market and non-state actors to fight climate change.

6 Sustainable Food for a Healthy Planet:

We are producing and consuming more food than ever before, with detrimental impacts on human and planet health. This stream examines *Agricultural transformation* – sustainable and climate-smart agricultural models minimizing impacts on pollution - examples from rice sector and others including livestock sector ; *Nutrition and healthy diets* - embracing difficult questions and debates about meat versus vegetarian diets, also considering biofortification, plant health, which benefits in turn human health ; *Food waste* – measuring and achieving food waste reduction at a global level.

Session 1

09 March 2019 - 09:00-10:00

Conference Room 11

Science Shaping Green Policies and Market Responses

Energy Systems: Environmental and Health Impacts

Messages from GEO-6

Global energy consumption is expected to increase to around 19 billion tons by 2040, mostly in developing economies that depend on fossil energy. At the same time, nearly 1.1 billion still use traditional fuels for cooking and heat, facing exposure to concentrated indoor air pollution. Diseases related to air pollution caused 9 million premature deaths in 2015, accounting 16 percent of all deaths globally.

Ecosystem boundaries often do not correspond to geopolitical boundaries and environmental problems such as air pollution are often transboundary in nature. Because many of these transboundary problems are interrelated, there are opportunities to offer greater cooperation and coordination across political boundaries. This panel discussion will contribute towards today's energy use paradigms and drive support for more effective energy policy action.

On GEO Findings

Paolo Soprano, co-chair High-level Group

Prof. Huang Yi, co-chair High-level Group

Prof. Paul Ekins, co-chair of the GEO assessment

Prof. Joyeeta Gupta, co-chair of the GEO assessment

Abdalah Mokssit, Secretary, IPCC

On Environment and Health Impacts of Energy Systems

Dr. Pavel Kabat, Chief Scientist, World Meteorological Organization

Dr. N.H. Ravindranath, vice-chair of the Scientific Advisory Panel, IPCC

Dr. Oswaldo Lucon, GEO-6 energy and decarbonization author



<https://un-spbf.org>

Session 2

09 March 2019 - 10:00-11:00

Conference Room 11

Smarter, Greener Solutions for Cities

WASTE SYSTEMS: Environmental and Health Impacts

Messages from GEO-6

Eighty per cent of all wastewater produced globally – contaminated with human fecal matter as well as all the pharmaceutical and endocrine disruptors – is newly threatening human health and ecosystems and is discharged into the environment without any treatment. Endocrine disrupting chemicals and antibiotic-resistant bacteria are now widely distributed through the freshwater systems. Their long-term impacts include potential multigenerational effect, fetal underdevelopment, child neurodevelopment and male infertility. Human illnesses and deaths due to antibiotic – and antimicrobial – resistant infections are increasing rapidly and are projected to become a main cause of death worldwide by 2050. This session will share the environmental and health impacts of waste and build awareness and understanding of this emerging international issue threatening human health.

The desired outcome of this session is to create awareness on the environmental and health impacts of waste systems and continue discussions on the policy actions leading up to near zero-waste production.

Martin Brocklehurst, Citizen Science Global Partnership

Serge Salat, President, Urban Morphology and Complex Systems Institute

Cristina Guerreiro, Research Director Environmental Impacts and Sustainability, Norwegian Institute for Air Research

Session 3

09 March 2019 - 14:00-15:00

Conference Room 1

Big Data: Towards a Digital Platform for Our Planet

Special Session and Demo Hosted by IBM

Fast Tracking the SDGs Using Frontier Technologies

Big data and frontier technologies are not discriminatory in that they can be applied and adopted across a continuum of developing to mature economies to both address existing challenges and tap into new opportunities. Through IBM's own experience and partnerships with organizations large and small around the world we hope to demonstrate the potential of these technologies and that they are ready to be harnessed to solving problems from reducing hunger to conserving resources, from combatting pollution to addressing climate change, and more while providing economic benefits. Aimed to contribute toward a successful launch of UN's new

high-level Working Group on data designed to provide recommendations and help expedite the development of a Global Digital Platform for Planetary Data using frontier technologies.

Hendrik Hamann, Planetary Data Systems, IBM
Bruno da Costa Flach, Big Data, IoT, Artificial Intelligence, IBM
Ajay Deshpande, Master Inventor, Blockchain Technologies, IBM
Jehiel Oliver, CEO, Hello Tractor, Nigeria - Startup Partner

Session 4

09 March 2019 - 15:00-15:45

Conference Room 11

Climate Challenge: Finance, Markets and Non-State Actors

EXTENDED SESSION HOSTED BY THOMSON REUTERS: PART 1

The Climate Challenge and non-State Actors: Understanding the Challenge

National pledges under the Paris Agreement will only bring a third of the reduction in emissions required by 2030 to meet climate targets, with private sector and sub-national action not increasing at a rate that would help close this worrying gap. This session, organized in cooperation with Thomson Reuters, examines means to empower and support private sector emissions measurement and leadership to build resiliency in key business sectors, improve air quality and meaningfully address the climate change crisis. It will include the latest findings on the role of C-level strategy, the levels of emissions measurement and leadership, and a discussion of the available drivers and pathways to accelerate our progress.

H.E. Xie Zhenhua, Special Rep. for Climate Change, China
Timothy Nixon, Chief Sustainability, Thomson Reuters
Carlo Papa, Director, Enel Foundation
Maurice Borgeaud, Head of Department, European Space Agency
Anne Bowser, President, Citizen Science Alliance



Session 5

09 March 2019 - 15:55-16:40

Conference Room 11

Climate Challenge: Finance, Markets and Non-State Actors

EXTENDED SESSION HOSTED BY THOMSON REUTERS: PART 2

The Climate Challenge and non-State Actors: The Way Forward

National pledges under the Paris Agreement will only bring a third of the reduction in emissions by 2030 to meet the climate targets. Private sectors and non-national action are not increasing at a rate that would help close this worrying gap. This session, organized in cooperation with Thomson Reuters, examines means to empower and support private sector emissions measurement and leadership to build resiliency in key business sectors, improve air quality and meaningfully address the climate change crisis. It will include the latest findings on the role of the C-level strategy, the levels of emissions measurements and leadership, and a discussion of the available drivers and pathways to accelerate our progress.

Jian Liu, Director of Science, UN Environment Programme

Ruth Kagia, Senior Advisor to H.E. the President of Kenya

Rhian-Mari Thomas, Global Head of Green Banking and Chair, Barclays Green Banking Council

Paul H. Jefferies, Head of Policy, BP

Gayle Schueller, Chief Sustainability Officer, 3M

Session 6

09 March 2019 - 16:50-17:35

Conference Room 11

Smarter, Greener Solutions for Cities

Towards Global Green Energy Transition : Empowering Policies and Innovative Finance

In this century there is a need for smart energy solutions that are reliable, affordable and beneficial for health, economy and environment. To promote the world's energy transition, we need to adopt the low-carbon and high-efficiency development model, shifting the focus from regional power balance to large-scale allocation. Renewable and clean energy is abundant however unevenly distributed, usually intermittent and volatile. Only by integrating renewable into a bulk power grid it will be promoted on a global level.

This session will address the main environmental challenges encountered in the implementation of environmental governance strategies, including halting biodiversity loss, increasing resource and energy efficiency and waste management. In the next step innovative and green business developments using sustainable technological achievements will be discussed. Further, the session will highlight the benefits of regional cooperation and public-private partnerships in the green energy sector, sharing insights and experience amongst the stakeholders.

Dr. Huang Han, Global Energy Interconnection Development and Cooperation Organization (GEIDCO)
Luming Ai, Chairman, Society of Entrepreneurs for Ecology (SEE Foundation)
Harry Verhaar, Head of Global Public & Government Affairs, Signify - Philips Lighting
Paulo Cesar Vaz Esmeraldo, Deputy CEO of State Grid Brazil Holding
Ambassador Marta Juarez, Costa Rica
Qingle Huang, Vice Chairman, Shouhang Energy Saving

Session 7

09 March 2019 - 17:45-18:30

Conference Room 11

Science Shaping Green Policies and Market Responses

Advancing Environmental Rights in Business

Natural capital underpins all economic activities. In this session the key environmental risks to businesses will be identified and ways how to overcome them will be presented. Environmental degradation puts at risk the capacity of natural capital assets to continue to generate the ecosystem service benefits upon which businesses depend. Economic sector dependencies on natural capital and the flow of ecosystem services derived from them is poorly documented. This session will articulate these links and key risks in a solution oriented approach.

Businesses from all sectors will anticipate increasing environmental risks along their supply chains as environmental legislation and regulation evolves in response to a growing set of environmental threats, most significantly climate change. Environmental degradation puts at risk the business sector and the capacity of natural capital assets to continue to generate the ecosystem service benefits upon which businesses depend.

Arnold Kreilhuber, Law Division, UN Environment Programme
Carlo Papa, Director, Enel Foundation
UN Office of Human Rights



Session 8

09 March 2019 - 09:30-10:55

VIP Delegates Lounge

Big Data: Towards a Digital Platform for Our Planet

Big Data , New Frontiers - Part 1

UN Environment Situation Room: Where it all started

We are living in a new era with exponential increase in generation of data. It creates both an opportunity and a challenge. The opportunity is to improve the level and quality of the decisions by basing them on evidences provided by the data, as well as using the data to verify whereas new policies are improving the situation. The challenge is to deal with this Big Data. This requires automated procedures for transforming data into relevant information as well as to generate new tools allowing disseminating this information to policy makers and other end-users.

UN Environment Programme is aiming at developing the "World Environment Situation Room" (WESR) which is not only a new data platform, but also a new way of accessing data, via a worldwide partnership model with multiple data-centers. The WESR will help harnessing Big Data on the Environment for Sustainable Development, such as satellite imagery, geospatial data, observation, models and scenarios. As well as statistical data, reporting data and will help to access all documentation and reports produced by UN Environment Programme.

UN Environment Situation Room: Where it all started

Pascal Peduzzi, Director, Global Resource Information Database

Neil Burgess, Chief Scientist, UNEP WCMC

Pierre Lacroix, UNEP GRID Geneva

Stuart Minchin, Chief Environmental, GEO Science, Australia

Adam Smith, Co-Founder/Business and Sales Head, Descartes Labs

Earth Observations: The Potential to Better Understand Earth and its Environment

Maurice Borgeaud, Head of Earth Observations, Science, Applications and Climate, European Space Agency

Session 9

09 March 2019 - 15:10 - 18:25

Conference Room 1

Big Data: Towards a Digital Platform for Our Planet

Big Data, New Frontiers- Part 2

We are living in a new era with exponential increase in generation of data. It creates both an opportunity and a challenge. The opportunity is to improve the level and quality of the decisions by basing them on evidences provided by the data, as well as using the data to verify whereas new policies are improving the situation. The challenge is to deal with this Big Data. This requires automated procedures for transforming data into relevant information as well as to generate new tools allowing disseminating this information to policy makers and other end-users.

The Space Climate Observatory (SCO) : Observing Climate Change and its Impacts – Creating the Model Project

Dr. Selma Cherchali, Programme Director, Space Climate Observatory

China's New Technological Frontiers in Planetary Data Management

Professor Chen Fang, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences

Earth Observations and the SDGs – Horizon 2020

Jean Dusart, Scientific Project Officer, European Commission

Transforming Development with Planetary Data and Artificial Intelligence

Andrew Zolli, VP Global Impact Initiatives, Planet.com

Earth Observations: The Role of Citizen Science

Anne Bowser, Director of Innovation, The Wilson Centre/ Representative, Citizen Science Global Partnership

Diversified Finance for Development - What's for Free and What is Not

James Donovan, CEO, ADEC Innovations

Andrew Zolli, VP Global Impact Initiatives, Planet.com

Rhian-Mari, Chair, Barclays Green Banking Council



Session 10

09 March 2019 - 15:10 - 18:25

Conference Room 13

Science Shaping Green Policies and Market Responses

Session Organized by the Belmont Forum

Advancing the African Science Enterprise: Investment in Research in Africa

This session will discuss the growing scientific capability of African academic institutions and the need for innovations in the entrepreneurial sector. Local and non-academic knowledge systems become increasingly connected to decision support organizations to pursue solutions. There is a considerable potential for the African transdisciplinary partnerships to create informed approaches to global change challenges.

Phethiwe Matutu, NRF South Africa

Erica Key, Belmont Forum

Makiba Charles-Ayinde, American Association for the Advancement of Science

Nelson Torto, Executive Director, African Academy of Sciences

Session 11

09 March 2019 - 10:00-11:00

Conference Room 13

Sustainable Food for a Healthy Planet

Session hosted by the World Conservation Monitoring Centre (WCMC)

Making Trade a Positive Force in the World

Nature underpins our economic system: Data on trade in endangered species shows that in 2017, 28 million transactions of endangered species and commodities took place into EU with a value of almost 2 billion euros, and with on-trading producing further direct economic benefit. The over-exploitation of wild resources has led to severe species loss, wiping out local livelihood options and keeping people in a cycle of poverty. Explicitly addressing the challenges of trade and working together towards better practices that enhance sustainability will be essential to fulfill these ambitions.

Izabella Teixeira, Co-Chair, International Resources Panel

Helen Crowley, Head of Sustainable Sourcing Innovation, Kering

UK Government (TBC)

Government of Ethiopia

Session 12

09 March 2019 - 15:00-15:45

Conference Room 13

Smarter, Greener Solutions for Cities

Session Hosted by Philips / Signify

Innovation in the Energy Sector and the Future of Sustainability

Increased awareness and ability to act on advancing energy efficiency as a key contributor to the goals of the Paris Agreement. In particular this session will explore what enablers - in technology, policies and business & financing models - exist that can be used to unlock the enormous energy efficiency potential in buildings and cities.

Energy efficiency has to contribute at least for half of the task of keeping us below 2°C global warming (and as close to 1.5°C as possible). Current annual energy efficiency improvement rate around the world is about 1.5% per year. The understanding that this rate needs to double has improved in the last years, however still the implementation of energy efficiency projects (renovation of buildings and city infrastructure) is still lagging far behind the level that is needed. This has for an important part to do with the lack of knowledge on potential enablers such as technology, policies; business & finance models and mechanisms.

H.E. Siim Kiisler, President of the UN Environment Assembly

Harry Verhaar, Head of Global Public & Government Affairs, Signify - Philips Lighting

Kristina Klimovich, LEED® GA, PACENation Fellow

Jonathan R. Everhart, CEO, Global ReEnergy Holdings

Paul De Larminat, Director of Advanced Technologies, Johnson Controls

Session 13

09 March 2019 - 15:55-16:40

Conference Room 13

Climate Challenge: Finance, Markets and Non-State Actors

Session Hosted by Climate and Clean Air Coalition (CCAC)

The Power of Integrated Action on Air Pollution: Stories from China and Africa - South-South Cooperation

Air pollution, the greenhouse gas effect and climate change are closely related. The main sources of CO₂ emissions – the extraction and burning of fossil fuels – are not only key drivers of climate change, but also major sources of air pollutants. This session will present new country, city and private sector examples of integrated strategies on improving air quality and tackle climate change.



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Gyimah Mohammed, Ministry of Environment, Ghana
Bala Bappa, Federal Ministry of Environment, Nigeria
Nathan Borgford - Parnell, Climate and Clean Air Coalition
Yu Jianhua, Deputy Director General, Beijing Municipal Environment Bureau
Steven Kukoda, Executive Director, International Copper Association

Session 14

09 March 2019 - 16:50-17:35

Conference Room 13

Smarter, Greener Solutions for Cities

Accelerating Africa's Shift to Electric Mobility

Africa is facing an unprecedented mobilization and motorization rate driven by dynamic urbanization and economic growth. The continent is urbanizing faster than any other continent in the world, at a rate of 4% per year, compared to the global average of 2%. Africa therefore urgently needs a transport alternative to stave off the burden of fuel dependency and subsidies, as well as an electricity storage solution to leverage abundant renewable energy resources. Globally, transport contributes one quarter of all energy-related greenhouse gas emissions to the atmosphere. It is projected to grow to one third by 2050.

This session will provide a platform to discuss opportunities for electric mobility in Africa and to find solutions for the challenge of increased air pollution. International financial institutions, vehicle manufacturers and representatives from regulatory bodies will debate the following points:

- Opportunities for the shift to electric mobility
- Market challenges and opportunities
- Regulatory framework challenges and solutions
- Finance opportunities for electric mobility

Wanjiku Manyara, Petroleum Institute of East Africa
Joshua Whale, CEO, Ampersand Electric Motorcycles, Rwanda
Peter Kaigwara, Energy Regulatory Committee, Kenya
Jane Akumu, UN Environment Programme

Session 15

09 March 2019 - 17:45-18:30

Conference Room 13

Climate Challenge: Finance, Markets and Non-State Actors

Session Hosted by Climate and Clean Air Coalition (CCAC)

Putting the World on a Safe Path to Meet the 1.5°C Challenge

In this session, panelists will make the case for integrated action on air pollution and climate to unlock the urgent ambition the world needs to achieve a safe path to meet the 1.5 °C Challenge.

Strategies that integrate all climate forcing air pollutants and greenhouse gas emissions, such as those that target the short-lived climate pollutants (SLCPs), can contribute to a path that rapidly reduces the rate of warming in the near-term, preventing millions of premature deaths from air pollution, protects against dangerous climate feedback loops and contributes to the global sustainable development goals.

Johan Kuylenstierna, Policy Director, Stockholm Environment Institute

Pavel Kabat, Chief Scientist, WMO

Helena Molin Valdes, Head of Secretariat , CCAC

Luke Davey, Head of Business Operations, Inspira Farms

Rodolfo Lacy, Director of Environment, OECD

Session 16

09 March 2019 - 09:00-10:00

Press Room

Science Shaping Green Policies and Market Responses

Combating Lead: From Paint to Batteries, How New Policies and Technologies are Helping Tackle a Dangerous Toxicant

Lead is a multisystem toxicant; exposure can cause chronic and debilitating health impacts in all age groups but is particularly harmful to young children.

The UN Environment Programme and WHO jointly lead the Global Alliance to Eliminate Lead Paint. The Lead Paint Alliance has set the target that all countries should have in place legally binding controls on lead paint by 2020, effectively banning the manufacture, import, sale and use of lead paint.

This session will discuss innovative alternatives to lead paint and batteries.



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Through the Strategic Approach to International Chemicals Management (SAICM), a Global Environmental Facility (GEF) funded project, the Lead Paint Alliance will further assist 40 countries to legislate and implement legislation to restrict the use of lead paint. As of January 2019, UN Environment Programme has been mandated to undertake activities to further capacity building, technical support and guidance to countries on that topic.

Uemit Hancer, Director, BASF Chemicals (tbc)
Brian Wilson, International Lead Association
Jacqueline Alvarez, UN Environment Programme
Tadesse Amara, Co-Chair, IPEN

Session 17

09 March 2019 - 10:00-11:00

Press Room

Smarter, Greener Solutions for Cities

Attaining Clean, Affordable Energy in Africa: Role of South-South Cooperation

The discussion will identify key areas in the renewable energy sector in which the South-South Cooperation can play a catalytic role in achieving Sustainable Development Goal 7: affordable and clean energy for all. The recommendations will form the basis for further action in the renewable energy sector by UN Environment Programme and its partners.

The shift from fossil fuels to renewable energy sources such as solar, wind and biofuels forms the key for achieving globally social and economic development as well as environmental sustainability. The session will focus on experiences from Africa and explore the regulatory and policy frameworks that are required to unlock the renewable energy sector through South-South Cooperation and technology transfer.

Keriako Tobiko, Cabinet Secretary, Ministry of Environment and Forestry, Kenya
Dr. Huang Han, Global Energy Interconnection Development and Cooperation Organization (GEIDCO)
Isaiah Owiunji, Regional Lead - Energy, WWF
Mohua Mukherjee, Energy and Climate Finance Expert, International Solar Alliance
Mugo Kibati, Chairman, Lake Turkana Wind Power Ltd

Session 18

09 March 2019 - 15:00 - 15:45

Press Room

Sustainable Food for a Healthy Planet

FOOD SYSTEMS: Environmental and Health Impacts

Messages from GEO-6

The global footprint of food production is responsible for 29% of the global greenhouse gas emissions. Today's food production patterns led to increased biodiversity loss and air/water pollution. Responsible strategies to tackle these challenges are identified including a global transformation towards more sustainable food production including the reduction of food losses and an intelligent waste management. The promotion of sustainable diets will be necessary to convince populations to adopt healthier diets. These processes will need to be flanked by outreach messages, seeking to educate people and influence a global transformation towards healthy consumption and production patterns that are environment friendly.

The panel discussion will focus on globally carried out food production systems and their environmental impact drawn from the sixth edition of the Global Environment Outlook. All speakers will present innovative solutions to foster sustainable production of crops, livestock and fisheries to meet today's growing population amidst climate change challenges and growing urbanization pressure.

Brett Rieron, World Food Programme

Andrés Guhl, Universidad de los Andes, Colombia

Lorenzo Giovanni, Senior Economist, FAO

Session 19

09 March 2019 - 15:55-16:40

Press Room

Sustainable Food for a Healthy Planet

Session Hosted by IFA and UN Environment Programme

Healthy Food for a Sustainable Planet - Part 1

We are producing and consuming more food than ever before, with detrimental impacts on human and planet health. The science indicates solutions, but the reality represents still numerous gaps. This session will examine critical areas of agricultural transformation that can make our food systems more environmentally sound, but also look at trade-offs and barriers. We will examine this issue from several perspectives; from the perspectives of inputs such as fertilizers, pest management and varietal selection and also from a wider perspective of consumer demand and policy.



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The session will discuss how harnessing consumer demand and policy can benefit the creation of a sustainable and equitable agriculture sector. It will highlight leading examples and also identify gaps that remain to be filled. The 2019 Science-Policy- Business Forum will present some areas of emerging consensus and also examine the important role of business and policymakers in moving us towards more sustainable food systems.

Dr. Lilian Wanjiru Mbutia, Senior Agronomist, ICL Group and Project Coordinator of International Potash Institute
Robert Hunter, Executive Vice-President Crop Protection, Croplife International
Dr. Abdelbagi Ismail, IRRI regional representative
Izabella Teixeira, Co-Chair, International Resource Panel and former Minister of Environment, Brazil

Moderator: Yvonne Harz-Pitre, Director, Comms and Public Affairs, International Fertilizer Association (IFA)

Session 20

09 March 2019 - 16:50-17:35

Press Room

Science Shaping Green Policies and Market Responses

Extended Session by the International Resource Panel (IRP) - PART 1

Launch of Global Resources Outlook 2019: Implications for Business Leaders

The IRPs desired outcome is to pre-launch its new report, Global Resources Outlook 2019: Implications for Business Leaders and introduce the private sector to the work of the IRP. The IRP aims to share outcomes and findings of the summary and full report, including information on why the private sector can benefit from the scientific analysis presented, providing links to SDG targets as well as other international commitments. Moreover, the IRP hopes to reinforce the private sector's role in interacting with international policy makers. Lastly, the IRP aims to have an open discussion with the private sector about the kind of research that is still needed and can be facilitated by the sector to move forward.

The IRP believes that decoupling economic growth from resource use and its impacts must be the paradigm of a new economy that can achieve the SDGs and boost economic development. Businesses are not only key enablers in the transition to decoupling, but also need the decoupled economy for lasting business success. The session will be divided into two forty-five-minute slots separated by a coffee break. This session will set the scene with presentations by Panel scientists and Co-chairs on the Global Resources Outlook 2019: Implications for Business Leaders.

Izabella Teixeira, Co-Chair, IRP
Bruno Oberle, Lead Author, Global Resources Outlook
Janez Potočnik, Co-Chair, IRP

Session 21

09 March 2019 - 17:45-18:30

Press Room

Science Shaping Green Policies and Market Responses

Extended Session by the International Resource Panel (IRP) - PART 2

Global Resources Outlook 2019: Business Perspective

The IRPs desired outcome is to pre-launch its new report, Global Resources Outlook 2019: Implications for Business Leaders and introduce the private sector to the work of the IRP. The IRP aims to share outcomes and findings of the summary and full report, including information on why the private sector can benefit from the scientific analysis presented, providing links to SDG targets as well as other international commitments. Moreover, the IRP hopes to reinforce the private sector's role in interacting with international policy makers. Lastly, the IRP aims to have an open discussion with the private sector about the kind of research that is still needed and can be facilitated by the sector to move forward.

The IRP believes that decoupling economic growth from resource use and its impacts must be the paradigm of a new economy that can achieve the SDGs and boost economic development. Businesses are not only key enablers in the transition to decoupling, but also need the decoupled economy for lasting business success. The session will be divided into two forty-five-minute slots separated by a coffee break. This session will host a dynamic Panel discussion that includes scientists and government Steering Committee members from the IRP, as well as key private sector partners in the development of the Implications for Business Leaders product.

Stefanie Hellweg, Professor, Swiss Federal Institute of Technology (ETH)

Matteo Cavadini, Senior Business Developer-East Africa, Enel

Harry Verhaar, Head of Global Public and Government Affairs, Signify - Philips Lighting

Agus Justianto, Republic of Indonesia

Session 22

10 March 2019 - 09:00-09:45

Conference Room 11

Climate Challenge: Finance, Markets and Non-State Actors

Green Collar Jobs: A Bright Hope for the Planet?

Youth unemployment is creating a massive crisis affecting more than 192 million young people across the world. Today higher education no longer a guarantee for a decent job, not even considering a green one. Youth unemployment is costing governments billions of dollars and represents a massive loss of productivity. Further, it is seeding globally frustration around the inequality of economic opportunities that young people face.



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However there is a new approach that has the potential to change this circle: “Green Collar Jobs”. The International Labour Organization (ILO) has shown how 24 million jobs could be created from a clean energy and a circular economy. But the scope stretches far beyond this number if conservation and forestry restoration were added to generate a “triple dividend” of youth employment, complying with the Paris Agreement and achieving the SDGs.

Carlo Papa, Director, Enel Foundation
Professor Jiang Wu, Vice Chancellor, Tongji University (TBC)
Bert der Wel, Head of Climate Policy, International Trade Union Confederation
Charlotte Bonner, Sustainability Innovation Manager, National Union of Students, UK

Session 23

10 March 2019 - 11:00-11:55

Conference Room 11

Smarter, Greener Solutions for Cities

Development of Sustainable Water Infrastructure

The application of technology, science and policies to the development of climate resilience and sustainable water infrastructure presents many challenges and opportunities. Challenges related to coastal and inland flooding, drought, ensuring water quality, safeguarding the environment, and the development of sufficient navigation infrastructure to support both national and world economies can only be addressed successfully through the application of new and emerging approaches and innovative technologies. Collaboration across multiple sectors is a prerequisite to delivering innovative solutions for enduring water infrastructure problems.

Polite Laboyrie, President, Central Dredging Association (CEDA)
Arjan Hijdra, Director, Global Infrastructure Institute
Remment Ter Hofstede, Van Oord Dredging and Marine Contractors
Geert van Cappelle, Secretary General, World Association for Waterborne Transport Infrastructure (PIANC)

Session 24

10 March 2019 - 12:05-13:05

Conference Room 11

Smarter, Greener Solutions for Cities

Alternatives to Plastics: Current Challenges and Future Vision

Plastic is a widely used material in the economy and daily life. Plastic waste pollution has been increasing in severity every year. Single use-plastic ban without alternatives may cause new challenges.

In this session, we will look at how new technology, such as the biodegradable materials created by private sector, can contribute to the current issue, while showing the challenges that public sector are facing and the prospects for resolution to be further developed.

Geoffrey Wahungu, Director General, National Environment Management Authority (NEMA), Kenya
Lilian Magak, Kenya Commercial Forestry Programme
Yoshiki Takeoka, General Manager, Kaneka
Mr. Albert Nyagechi, Manager of Chemical Standard, Kenya Bureau of Standard
Mrs. Shollay Ramlaul, Head of Sales & Business Development East Africa, BASF East Africa

Session 25

10 March 2019 - 14:15 - 15:15

Conference Room 11

Science Shaping Green Policies and Market Responses

Third Pole: A Call for Action to Combat Climate Impacts in Fragile Ecosystems

The Pan-Third Pole is widely acknowledged as the Asian Water Towers. This region has many commonalities with the North and South Poles, including environmental degradation and challenges to adapt to extreme environment (e.g. short growing season, fragile to climate change), and amplified warming rate.

As climate change is coming fast and furious to lives on earth, it is urgent to undertake further research and action to understand the climate changes and their future scenarios, coordinating with existing institutional and scientific structures and calling for global coordinated action.

Prof. Tandong Yao, Institute of Tibetan Plateau Research, Chinese Academy of Sciences
Dagfinnur Sveinbjornsson, CEO, Arctic Circle
Jan Dusik, Head of Arctic Programme, UN Environment Programme
Alejandro Argumedo, Director, Association ANDES
Matthias Finger, European University Institute
Xi Chen, Vice President, Xinjiang Branch - Chinese Academy of Sciences
Arnico Kumar Panday, The International Centre for Integrated Mountain Development (ICIMOD)
Fahu Chen, Director, Institute of Tibetan Plateau Research, Chinese Academy of Sciences



Session 26

10 March 2019 - 09:00 - 09:45

Conference Room 1

Big Data: Towards a Digital Platform for Our Planet

Foresight, Early Warning for Decision-making

The session will present practical implementations of Foresight, Early Warning and Emerging Issues analysis providing support to decision making and policy and action for prevention and combat of vulnerabilities in particular in developing countries.

Abdu Muwonge, Urban Specialist, World Bank
Thea Carroll, Coordinator, CITES MIKE Secretariat
Charles Sebukeera, Regional Office for Africa, UN Environment Programme
Margaret Nthuli, Digital Transformation, ESRI Africa
Derek Gliddon, Acting Director for Research and Innovation, Environmental Agency of Abu Dhabi

Session 27

10 March 2019 - 11:10 - 11:55

Conference Room 1

Big Data: Towards a Digital Platform for Our Planet

Innovative Technologies and Approaches in Monitoring the SDGs

This session will aim to highlight the use and display of innovative approaches to filling gaps in monitoring the SDGs. Currently, only around a third of the environmental indicators in the SDGs can be measured. Filling environmental monitoring gaps will require a transition from traditional statistical monitoring toward maximizing the use of new technologies; better exploiting data from satellites, citizen science and other forms of big data; and improved data integration.

Gilberto Camara, Director, Group on Earth Observations
Brian Sullivan, Team Leader, Google Earth Engine
Philip Thigo, Office of the Deputy President, Kenya
Jillian Campbell, UN Environment Programme
Steffen Fritz, Earth Observations and Citizen Science Leader, International Institute for Applied Systems Analysis

Measuring Progress towards Achieving the SDGs

Jillian Campbell, UN Environment Programme

Session 28

10 March 2019 - 12:20 - 13:05

Conference Room 1

Big Data: Towards a Digital Platform for Our Planet

Monitoring Ambient Water and Air Quality : Launch of GEMStat Data Interface

Ambient Water and Air Quality – what can be observed in the world - is reflecting all influences, drivers, development pressures, good and poor management. Water and Air Quality monitoring data and information are critical to inform about the risks and opportunities by linking various 2030 Agenda Goals in a nexus perspective. Those are reflected in the dedicated SDG 6 on water and the targets 3.9 and 11.6 related to air.

This session presents the functionalities and data services of the new GEMStat database and platform on global water quality data on surface and groundwater waters. Case studies from Cape Town, South Africa, will highlight the demand for quality water supply relying on groundwater in urban surroundings, which is a critical issue in the recent past leading to water scarcity.

Hartwig Kremer, Head of Global Environment Monitoring, UN Environment Programme

Philip Saile, Head of GEMS Data Centre, Federal Institute of Hydrology, Germany

Dylan Blake, Geologist, UMWOTO Africa

Nathan Pavlovic , Lead Geospatial Data Scientist, Sonoma Technologies

Miguel Escribano, Business Development Manager, Kunak

Stephanie Holzwarth, Urban Mobility Unit, UN Habitat

Session 30

10 March 2019 - 09:00 - 09:45

VIP Delegates Lounge

Smarter, Greener Solutions for Cities

Sustainable Water and Waste Management in Developing Cities

Emerging and developing countries are confronted with a fast growing population and a concentration in urban environments. High water and goods consumption leads to pressure on surface water quality and omnipresent wastes leading to hygienic problems and large greenhouse gas emissions. Classical treatments are often not installed due to lack of sufficient financial resources and sustainable non-adapted business plans.

This session will explore stakeholders of cities and urban waste and waste water management to new markets for value added products from the integration of waste and waste water treatment. These approaches must lead to clean water, recovery of nutrients and fibers and the generation of energy (biogas or electricity) as economic



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benefits. Indeed reduced investment and operational costs will be key to manage the problems in the emerging cities of today. Avoidance of high carbon inputs to the surface water will allow the increase of river resilience and its rejuvenation leading to better water quality and restored ecological systems.

Prof. Jiuhi Qu, Chinese/American Academy of Engineering
Veerle Vandeweerd, Founder, GSTIC
Prof. Ludo Diels, Research Lead, VITO
Prof. Tom Ogado, ED ACTS
Nahashon Muguna, Director, Nairobi Water and Sewerage Co.

Session 31

10 March 2019 - 11:10 - 11:55

VIP Delegates Lounge

Climate Challenge: Finance, Markets and Non-State Actors

Avoiding Global Warming through Clean and Efficient Cooling Innovations

Through efficient and clean cooling, the world can avoid significant global warming and deliver savings of USD 2.9 trillion. Some countries are already harnessing the benefits of moving towards energy efficient district energy systems, refrigerators and air conditioners, where the big wins lie. Now is time to take action by switch.

Given that millions of people die every year from lack of cooling access, whether from food losses, damaged vaccines or severe heat impacts, this is a glaring omission. The need for cooling is universal but cooling means very different things to different groups of people. For those of us in the developed world it is about air-conditioned offices, hotel rooms, apartments, a fridge full of fresh food and convenience meals from all over the world; ice in our drinks. But subsistence farmers to slum dwellers equally have need for cooling but in very diverse ways and perhaps more life threatening: extending the life of crops while trying to moving them to market; ensuring access to basic vaccines; bearable or even just safe working and living environments.

H.E. Upendra Tripathy, Director General, International Solar Alliance
Juliet Kabera, Director General, Environment & Climate Change, Ministry of Environment, Rwanda
Gilles Vermot Desroches, Sustainability Director, Schneider Electric
Bertrand Swiderski, Director of Sustainability, Carrefour Group
Anna Dyson, Director, Yale Centre for Ecosystems in Architecture

Session 32

10 March 2019 - 12:05 - 13:05

VIP Delegates Lounge

Climate Challenge: Finance, Markets and Non-State Actors

The Race to a Clean Energy Future

Energy giants reveal how innovation and resource-saving technologies in their respective industries is leading to energy savings and healthier lifestyles. But what policies and incentives are required to improve access to such technologies?

The International Copper Association (ICA) is committed to reducing the amount of energy required to provide products and services to reduce carbon emissions. Every year, 8.5 million tonnes of copper are recycled into energy-efficient products. The Enel Foundation conducts research to explore the implications of global challenges in the energy domain, believing that the future we want is powered by affordable, reliable, sustainable and modern electricity smartly distributed to all. APPLiA represents the home appliance industry in Europe. It strives to increase product innovation while reducing the environmental impact of appliances. The Orchid Group, one of Africa's top investment companies, is pioneering the development of green energy solutions in Ethiopia.

Steven Kukoda, Executive Director, International Copper Association

Carlo Papa, Director, Enel Foundation

Paolo Falcioni, Director General, APPLiA

Peter Goetz, VP BSH Hausgerate GmbH

Akiko Seyoum, CEO Orchid Group

Session 33

10 March 2019 - 14:15 - 15:00

VIP Delegates Lounge

Climate Challenge: Finance, Markets and Non-State Actors

Session Hosted by CCAC

Towards Integrated Action on Air Pollution and Climate Change

In this session, panelists presenters will illustrate the enormous multiple-benefits of integrated action on air pollution and climate by showcasing new Integrated Assessments including the Air Pollution in Asia and the Pacific: Science-Based Solutions and the new Hindu Kush Himalaya Assessment. We will discuss how such assessments can drive policy decisions. The Climate and Clean Air Coalition will also present the plans for a new African Integrated Assessment.

Yasuo Takahashi, Vice Minister of Environment/Global Affairs, Japan

Dechen Tsering, Regional Director Asia Pacific, UN Environment Programme



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Arnico Kumar Panday, The International Centre for Integrated Mountain Development (ICIMOD)
Alice Kaudia, Climate and Clean Air Coalition

Session 34

10 March 2019 - 15:10-15:55

Science Shaping Green Policies and Market Responses

Emerging Issues: Solving the Broken Nitrogen Cycle

Nitrogen is one of the most abundant natural elements and largely benign in its unreactive forms. However, nitrogen pollution has grave impacts on ecosystems and humans. In the form of nitrous oxide, it is 300 times more powerful than carbon dioxide as a greenhouse gas, in addition to the effects of various nitrogen compounds on air quality, ground and water, and the ozone layer. A cohesive global approach to nitrogen management is needed in order to transform the nitrogen cycle into a sustainable, non-polluting, profitable circular economy. Although there has been some progress at the national level, a truly holistic approach to implementing effective nitrogen management strategies will require international cooperation.

Mark Sutton, Project Director, Centre for Ecology and Hydrology
Christopher Cox, UN Environment Programme
James Mutegi, Deputy Director, International Plant Nutrition Institute
Ramesh Rama Chandaran, Ministry of Environment, India

VIP Delegates Lounge

Session 35

10 March 2019 - 9:00-9:45

Science Shaping Green Policies and Market Responses

The Belmont Forum and Future Earth

Sustainability Research and Innovation 2020

Future Earth which supports the largest global community of sustainable researches and innovators and the Belmont Forum the world's largest consortium of transdisciplinary global change and sustainability research funders will present joint goals by cross-sectoral funders in the area of sustainability. Further, there will be topics of partnerships and training as well as knowledge exchange opportunities discussed.

Erica Key, Belmont Forum
Josh Tewksbury, Future Earth
Makiba Charles-Ayinde, American Association for the Advancement of Science

Press Room

Session 36

10 March 2019 - 11:10 - 11:55

Press Room

Science Shaping Green Policies and Market Responses

Session Hosted by International Resource Panel

New Hotspot Analysis Tools for Decision Making on Sustainable Consumption and Production

Many countries are working towards national policies on Sustainable Consumption and Production (SCP), which is the first target of SDG 12.

The Sustainable Consumption and Production Hotspot Analysis Tool (SCP-HAT), an online application jointly developed by the 10YFP Secretariat and the Life Cycle Initiative in cooperation with the International Resource Panel, Vienna University and CSIRO, will be launched and presented.

Janez Potočnik, Co-Chair, International Resource Panel

Stefanie Hellweg, Professor, Swiss Federal Institute of Technology (ETH)

Mei-Ling Park, UN Environment Programme

Session 37

10 March 2019 - 12:05 - 12:50

Press Room

Sustainable Food for a Healthy Planet

Session Hosted by IFA and UN Environment Programme

Healthy Food for a Sustainable Planet - Part 2:

Diets to Mitigate Climate Change

To transform our food systems, major changes are required in the way we produce process and consume food. This session will discuss how dietary shifts can contribute to a significant reduction in resource use and environmental impacts of food production and examine the role policy, business and marketing can play in achieving these goals. Following Saturday's session on Agricultural Transformation, this panel will bring the discussion full circle to identify possible solutions and the actions individuals can take to have a positive impact on both the environment and health.

Philip Lymberry, CEO, Compassion in World Farming

Prof. Linxiu Zhang, World Academy of Sciences for Development

Stineke Oenema, Coordinator, UN Standing Committee on Nutrition



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Bertrand Swiderski, Director of Sustainability, Carrefour Group

Moderator: Natascha Kooiman, CEO, Smackmakers and co-lead of Food Transition Coalition

Session 38

10 March 2019 - 14:15-15:00

Press Room

Science Shaping Green Policies and Market Response

Driving Transformative Innovation Through Sustainable Chemistry

Sustainable innovations in the chemical sector have the potential to trigger positive changes that go far beyond the chemical sector. The promotion of green and sustainable chemistry start-ups is a key element in transforming the chemical sector. In this sense, the International Sustainable Chemistry Collaborative Centre (ISC₃) is dedicated to this task as a new international and independent institute.

At this session, the ISC₃, together with high-ranking experts from industry, policy makers, civil society will explore enabling actions, initiatives and policies to leverage the transformative potential of sustainable chemistry start-ups, especially in emerging economies and developing countries.

Achim Halpaap, Senior Advisor, UN Environment Programme

Nzambi Matee, Founder, Gjenje Makers

Ylann Schemm, Director, Elsevier Foundation

Sascha Gabizon, Executive Director, Women Engage for Common Future (WECF)

Session 39

10 March 2019 - 15:10-15:55

Press Room

Science Shaping Green Policies and Market Responses

Citizen Science for Smart and Sustainable Cities of the Future

The future is urban: by 2050, 70% of the human population will live in cities. The future will also be driven by citizen science, a paradigm that emphasizes collaborative intelligence and co-creation to facilitate scientific and community-based solutions.

This session will study how the intersection of two megatrends—citizen science, and smart and sustainable cities—can help create a more sustainable future. We will present a case study of citizen science in the smart city of Barcelona; how new initiatives like Earth Challenge 2020 will help these pilot efforts scale and identify concrete

opportunities for cities to demonstrate global leadership in citizen science. Two additional panelists will analyze enabling conditions highlighting Citizen Science's role in empowering citizens and increasing science's credibility, in the context of SDGs.

Astrid Schomaker, Director of Global Sustainable Development, EU

Jean Dusart, European Commission

Timothy Nixon, Chief Sustainability, Thomson Reuters

Kathleen Rogers, President, Earth Day Network

Jaume Piera, Marine Science Institute, Spain

Session 40

10 March 2019 - 10:00-11:00

Conference Room 1

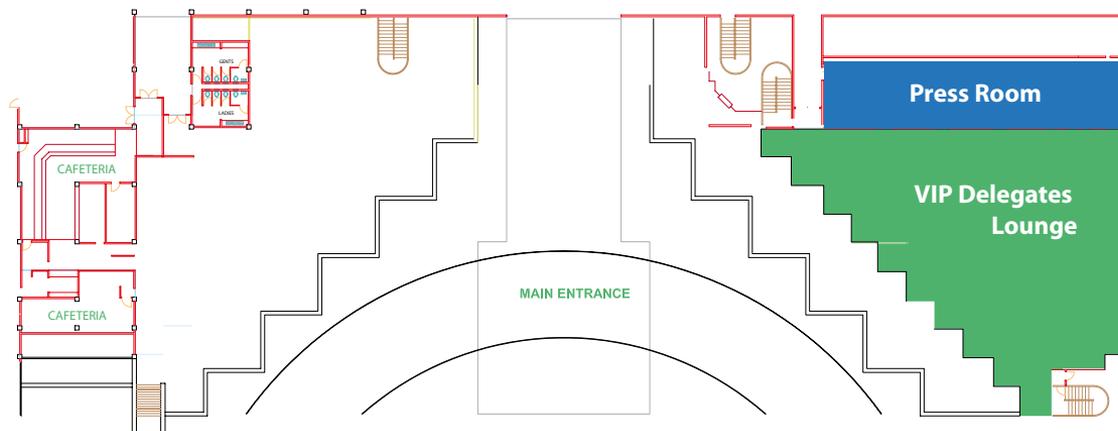
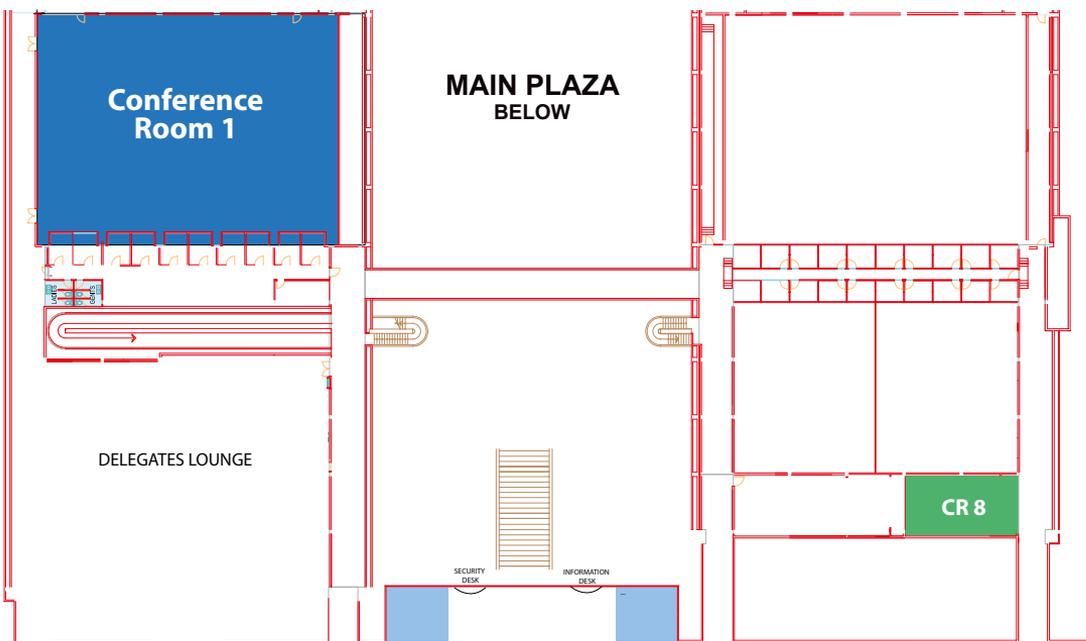
Green Technology Startup Initiative

Special Session Hosted by H.E. The President of the UN Environment Assembly

Startups are not only transforming markets and economic growth; some are helping save the planet. Venture capital investment in startups has surged to its highest level ever — \$148 billion last year alone. More than 40 Venture Capital-backed companies achieved billion-dollar valuations and joined the unicorn club. The GreenTech Startup Marathon will showcase ground-breaking innovations for the planet presented by Startups from around the world with in-depth discussions on financing and the policy support needed to scale-up opportunities and bridge the technology divide.

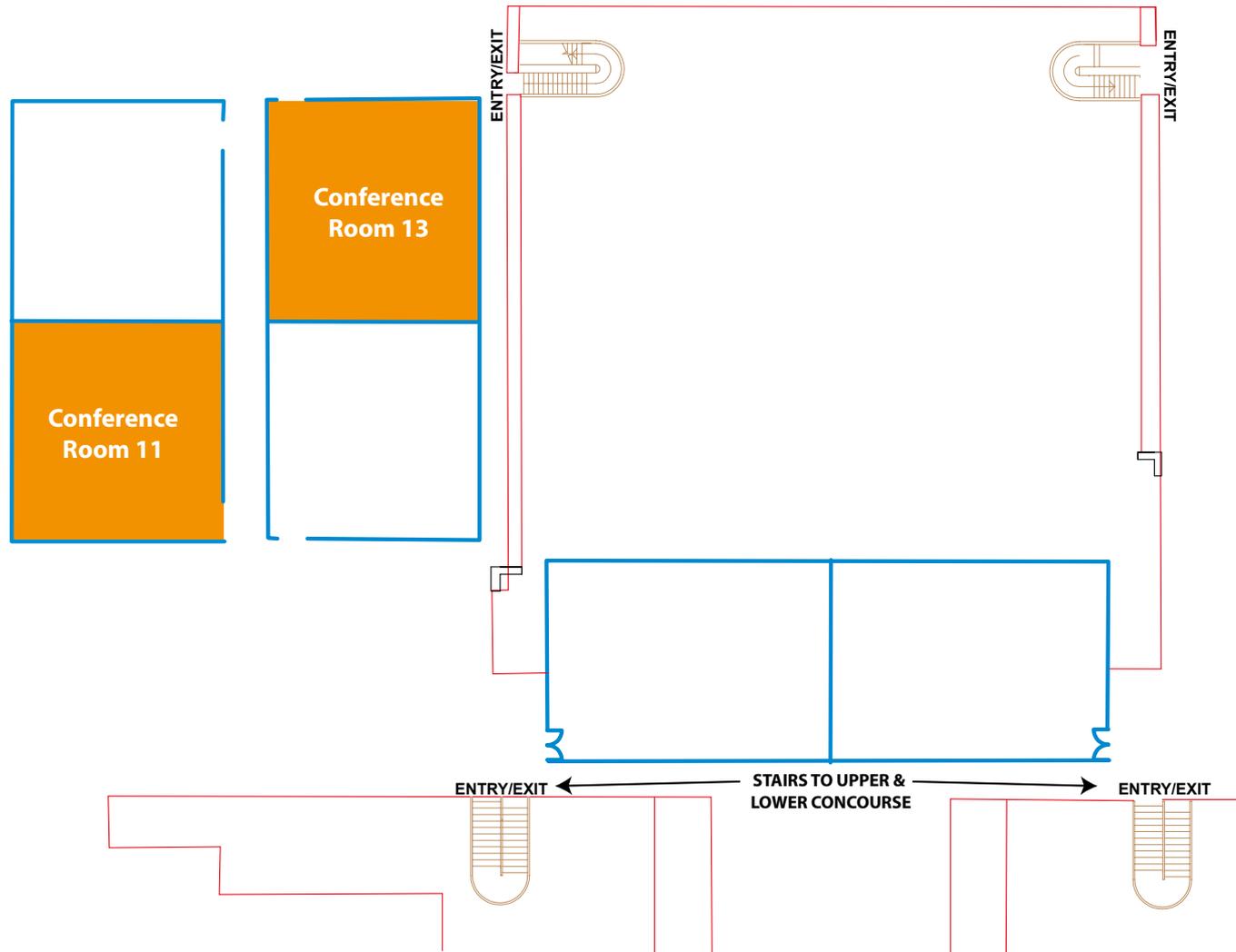
Moderated by:

Reuters Editor-at-Large Axel Threlfall



- Lower level
- Upper level





■ Roof level



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