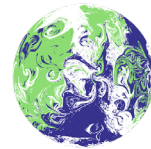


UN Climate Change Global Innovation Hub COP26 EVENT REPORT

March 2022



United Nations Climate Change
Global Innovation Hub



**UN CLIMATE
CHANGE
CONFERENCE
UK 2021**

IN PARTNERSHIP WITH ITALY





EXECUTIVE SUMMARY

The UN Climate Change Global Innovation Hub (UGIH) hybrid thematic sessions were held at COP26 in Glasgow on 1-12 November, 2021. This was a secretariat initiative supported by core partners: Climate-KIC, Research Institutes of Sweden (RISE) and Mission Innovation, the European Commission, BMZ/GIZ, the Open Earth Foundation, the Global Covenant of Mayors, and hands-on reporting support from the UN SDG-Campaign.

The objectives of that first UGIH physical hub dialogues were threefold:

- To promote the concept of system change in climate and sustainability innovation
- To identify and access potential future members of the different working groups and build a movement that will enable effective implementation of the UGIH
- To give UGIH high visibility

A total of 72 sessions were held throughout the two weeks. Each session ran for 60 minutes and served a specific climate innovation theme. The themes included system change and climate innovation, innovation for cities, digital finance, digital for climate, incubators and accelerators, innovation at the UN, youth and innovation, gender and innovation, and innovation to satisfy

the five core human needs of access, shelter, nutrition and health, clothing and leisure through low to zero carbon value-chains. All sessions were streamed live and are now available on-demand. Participation and engagement were widely promoted by the secretariat (via the Newsroom) and our partners, which provided some insights into the size and scope of the event.

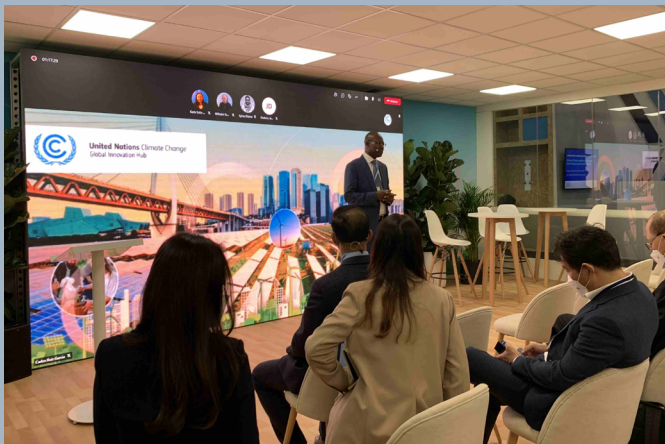


- 1 COP26 Pavilion in a form of a meeting room 50 Pax
- 1 Launching of a digital collaboration platform prototype
- 100+ hours of conference streamed live (& on demand)
- 72 Sessions (22.000+ views on YouTube)
- 325 Speakers, 90 in-person and 235 remote
- 39 Countries
- 179+ Organizations
- 1 COP26 side-event (supported)
- 2 Video, 1 newsroom article, 3 TedTalks



Overall, the three objectives that were set for the first UGIH dialogues were met. We had several influential leaders promoting system change for climate and sustainability innovation including the European Commission, the German Federal Ministry for Economic Cooperation and Development (BMZ), the government of British Columbia, mayors, CEOs, leaders of UN agencies, heads of multilateral development banks and stock exchanges, market players, avant-garde architects, accelerators and incubators, startups, think-tanks, academics, and philanthropists. We also received significant expressions of interest to join the movement from highly qualified experts, organizations, and students. The different events were well attended, especially via YouTube.

After eleven days of discussion, a closing ceremony was held to officially end the first UGIH dialogues. For frequent updates on the Hub, you are invited to please check our [website](#).



Visual assets



United Nations Climate Change
Global Innovation Hub

- UGIH Introduction video is available [here](#)
- The UN Climate Change Global Innovation Hub website is available [here](#)
- A visible article at the UNFCCC “COP26 latest news” has been published and is available [here](#): “UN Climate Change News, 31 October 2021 - COP26: Global Innovation Hub Launched for Transformative Climate Solutions.”
- All events at the Hub 1-12 November are hosted in a hybrid format and livestreamed on UGIH’s [YouTube channel](#) (Monday 8 Nov.-#Day7, Tuesday 9 Nov.-#Day8, etc.)
- COP26 closing ceremony video (informal) is available [here](#)
- Further updates, visual assets, framing questions for moderators and News are available at our Trello Board [here](#) including latest version of the our COP26 event Programme (attached).



MONDAY 1 NOVEMBER

Opening Session

10:00 -10:05	Welcome and introduction to session	Moderator: Katherine Foster, Open Earth Foundation (in-person)
10:05 – 10:15	Opening remarks by UNFCCC	Daniele Violetti – Senior Director, UNFCCC
10:15 – 10:25	Overview of the initiative: Why, what and how the UNFCCC Global Innovation Hub?	-Kirsten Dunlop, CEO, Climate-KIC (in-person) -Dennis Pamlin, Mission Innovation -Martin Wainstein, Executive Director, Open Earth Foundation (in-person)
10:30 -11:00	Core partners presentations -Reasons for engagement -Expectations -Contribution to the initiative	Open Earth Foundation
11:00 – 11:20	Break	
11:20 – 12:00	Short statements to express commitment to/interest in “System change as a frame for climate innovation”	-Mayor Lee Jae Joon, Goyang City (in-person) -George Heyman, Minister of Environment, British Columbia (in-person) -Gregor Robertson, Global Ambassador for the Global Covenant of Mayors for Climate and Energy (in-person) -Ilias Iakovidis, Advisor European Union, European Commission, Directorate-General for Communications Networks, Content and Technology, Adviser for Digital Aspects of Green Transformation (remotely)
12:00 – 12:10	Short video presentation	Katherine Foster, Open Earth Foundation (in-person)
12:10 – 12:30	Open Q&A Session	Tom Mitchell, Chief Strategy Officer, Climate KIC (in-person)
12:30 – 13:00	Presentation of the Virtual Collaboration Platform and how users can engage with the platform	Martin Wainstein, Executive director, Open Earth Foundation (in-person)
13:00 – 14:00	Lunch break	



14:00 – 14:40	Session 2: Subnational and city governments-Statements: Overview of their achievements and future work on climate innovation	Moderator: - Tom Mitchell, Climate KIC/Marieke van Staden, ICLEI - Mayor Lee Jae Joon, Goyang City (in-person) - Mayor Kennedy Stewart - Vancouver (remotely) - Robert David McDonald, Deputy Leader of City Council, Glasgow (in-person)
14:40 – 15:20	Session 3: Subnational and city governments-Statements: Overview of their achievements and future work on climate innovation	- Governor João Doria Government of São Paulo - Mayor Frank Cownie, President ICLEI/ Gino - Van Begin, Secretary-General – ICLEI
System Change and Innovation for Climate		
15:20 – 16:00	Session 4: Fire chat on system change and climate and SDG action	Caitlin Herren , Director Sustainability Solutions, Amazon (in-person)
16:00 – 17:30	Session 5: HL keynote address on “System change and climate innovation in supply chain and financial systems”	Targeted speakers: - Jules Kortenhorst , CEO RMI - Martin Lundstedt President and CEO, AB Volvo - Marco Alverà CEO SNAM - John Doerr, Chairman of Kleiner Perkins - Sandrine Dixson Decleve, Co-President, Club of Rome/Chair of the European Commission Expert Group, Economic and Societal Impact for Research and Innovation (ESIR) - Rachel Kyte, Member of the CPI Board and Dean of the Fletcher School at Tufts University (in-person) - Leyla Acaroglu, UN Champion of the Earth 2016
17:30 – 18:00	Open Q&A Session	Moderator: Laura Tobin FRMetS - Meteorologist & Weather Presenter - ITV Good Morning Britain

TUESDAY 2 NOVEMBER - CITIES



10:00 – 11:00	Session 1: Global action: Cities mobilizing urban transformation	Speakers: -Kirsten Dunlop, CEO, EIT Climate-KIC (in-person) -Matthew Baldwin, Deputy Director General, Mobility and Transport, European Commission (in-person) -Rogier Vandenberg, Global Director, World Resources Institute (in-person) -Jürgen Czernohorszky, Executive City Councilor for Climate, Environment, Democracy and Personnel, City of Vienna (remotely)
11:00 – 12:00	Session 2: Capital and finance innovation	Speakers: -Jeremy Gorelick, Green Finance Institute (remotely) -Tamara Singh, Board member of the People Centered Internet, Advisor OMFIF (remotely) -Divyata Ashiya, ex COO Goldman Sachs Merchant Banking Division International (in-person) -Ed Cox, Director of Inclusive Growth & Public Service Reform, West Midlands Combined Authority (in-person)
13:00 – 14:00	Lunch Break	
14:00 – 15:00	Session 4: Policy Innovation	Speakers: -Santiago Saura Martínez de Toda, Councillor for International Affairs and Cooperation / Concejal Delegado de Internacionalización y Cooperación, City of Madrid (remotely) -Rogier Vandenberg, Global Director, WRI (in-person) -Trude Rauken, Acting Executive Director of the Carbon Neutral Cities Alliance -Jean-Francois Mercure, Director of the University of Exeter's EEIST project (in-person)



15:00 – 16:00	Session 5: Innovation in collaborations with businesses, social enterprises, and other civic institutions: reshaping value chains for regional jobs and skills	Moderator: Ole Tillman, PEAK Speakers: -Adam McVey, Councilor/Council Leader Edinburgh (in person) -Katrien Rycken, Executive Director, Leuven 2030 (Belgium) (remotely) -Maya Færch, Built by Nature, Laudes (remote) -Emma Presutti, Strategic Innovation Designer, Chôra Foundation -Arno Bronte, Rotterdam Vice Mayor (Sustainability, Air Quality and Energy Transition)
16:00 – 17:00	Session 6: Climate entrepreneurship ecosystems in African cities: creating a supporting environment for transformational change	Panelists: -Martin Wainstein, Executive Director, Open Earth Foundation (in-person) -Nathaniel Amann-Blake; Assistant Deputy Minister Video Mines Digital Trust pilot -Professor Dr. Kim, University of Goyang/Goyang City -Anna Stanley, Manager, Climate Action, World Business Council for Sustainable Development (in-person) -Catherine Atkin, Director Stanford Codex Climate Data Policy Initiative (in-person)

WEDNESDAY 3 NOVEMBER - CITIES

10:00 -10:20	Session 1: System change and climate innovation in the technology industry	Fire Chat with Dr. Liangzhou Fang, Global VP and CMO, Huawei Digital Energy (remotely, with local support)
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Session 2: Subnational and city governments

11:00 – 12:00	Short-video presentation	Minister of Environment, South Australia
	Statements: City/Province/Country Champions	Potential partners: -Mayor Lee Jae Joon, Goyang (in-person) -Mayor Doug McCallum, Surrey - Video presentation by the BC Ministry of Energy, Mines and Low Carbon Innovation (recorded video) -Susan Aitken, Leader of City Council, Glasgow (in-person) -Valentina De Marco, Coordinator of International Alliances, Argentinian Network of Municipalities
	Open discussion	Moderator: Kirsten Dunlop, CEO, Climate KIC



12:00 – 13:00	Statements: City/Province/ Country Champions	-Oswaldo Lucon Climate Change Advisor Government of Sao Paulo -Alessandra Gallio, Councilor, Second Municipality of Guatemala
	Open discussion	Moderator: Jennie Dodson, Head of Secretariat, Mission Innovation. Head of International Energy Innovation Engagement, SICE, UK
13:00 – 14:00	Lunch Break	
Session 3: Digital Innovation Hub for Climate Change		
14:00 – 14:10	Opening remarks	Ovais Sarmad, Deputy Executive Secretary, UNFCCC
14:10 – 15:00	<p>Presentations/Panel discussions</p> <p>The key objective of the event is to showcase programs that focus on the intersection between the digital and green transformation and to share best practices on the transformational role of digital innovations for climate action.</p>	<p>Moderator: Ilias Iakovidis, European Commission/ Almut, Nagel, European Commission, DG CONNECT</p> <p>Speakers/Panelists -Carla Montesi, Director for Green Deal and Digital Agenda, DG INTPA, EC -Dr. Tania Vorwerk, Dep. DG for Private Sector, Trade, Employment and Digital Technologies, BMZ -Nouridine Bihmane, CEO Growing Markets Region & Decarbonization Business Line, ATOS -Lacina Koné, Executive Director, Smart Africa -Cecilia Scharp, Assistant Director General, Department for International Organisations and Policy Support, SIDA</p>
15:00 – 15:30	Launch of the Digital for Climate Innovation Challenge	<p>Moderator: Massamba Thioye, UNFCCC</p> <p>Speakers: -Carla Montesi, Director for Green Deal and Digital Agenda, DG INTPA, EC -Dr. Tania Vorwerk, Dep. DG for Private Sector, Trade, Employment and Digital Technologies, BMZ -Frank Barz, Program Director, TechBoost at Deutsche Telekom -Alicia Lenze, Director of Sustainability, SAP -Ovais Sarmad, Deputy Executive Director, UNFCCC</p>



Navigating the finance/digital/climate intersection

15:30 – 16:30	Session 4: Role of SE in promoting innovative climate solutions: financing, standards, and education	<p>Moderator: Tiffany Grabski, senior Specialist Climate Action, UN SSE</p> <p>Speakers/Panelists</p> <ul style="list-style-type: none"> -Caprioli Chiara, Senior Business Development Manager, Luxembourg Stock Exchange -Herry Cho, Head of Sustainability and Sustainable Finance, Singapore Exchange -Shameela Soobramoney, Chief Sustainability Officer, Johannesburg Stock Exchange -David Harris, Global Head of Sustainability Finance, Data, and Analytics, London Stock Exchange Group -Hideki Tomita, Chief Representative in Europe, Japan Exchange Group -David Colin, Chief Operating Officer, Mexico
16:30 – 17:30	Session 5: Innovative financial solutions for need-based/ solution-oriented approach to climate action	<p>Panelists:</p> <ul style="list-style-type: none"> -Antoine Sire, Global Head of Company Engagement BNP Paribas -Kampeta Sayinzoga, CEO, Development Bank of Rwanda -Henry Fernandez, CEO and Chairman of MSCI -Vivienne Yeda, Director General, East Africa Development Bank
17:30 – 18:15	Session 6: How do we accelerate climate action? Digital innovation collaboration and the path to net zero	<p>Moderator: Mark Evans, Chief Marketing Officer at GeSI</p> <p>Keynote Speakers: Malcom Johnson, deputy secretary-general, International Telecommunication Union</p> <p>Panelists:</p> <ul style="list-style-type: none"> -Florence Verzellen, Executive Vice President, Industry, Marketing & Sustainability at Dassault Systems -Tim Fleming, Director of Global Enterprise Sustainability at AT&T -Parul Gupta, Partner, strategic Initiatives, Arabesque -Dennis Pamlin, Head at Mission Innovation's Net-Zero Compatibility Innovations Initiative Senior Advisor at RISE; Accelerator Digital Sustainability Business at Knowit



18:15 – 18:45	<p>Session 7: How digital helped to accelerate the scale-up of the Climate Fresk</p> <p>Description: The Climate Fresk is an innovative collaborative learning tool that enables participants to understand climate change, think creatively about their means to address the climate crisis and engage in action. The development of a digital version at the start of the covid crisis accelerated the scale-up of the Climate Fresk enabling us to reach 235000 people in 50 countries already. How did we do it? Come and find out.</p>	<p>Presenter: Cedric Ringenbach, creator of the Climate Fresk and President of the Climate Fresk association</p>
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THURSDAY 4 NOVEMBER

Co-designing the UGIH Platform

10:00 – 11:30	<p>Session 1: Presentations</p> <ul style="list-style-type: none"> -How to develop innovation platforms that are effective in facilitating the development and implementation of climate and sustainability solutions 	<p>Presentor:</p> <ul style="list-style-type: none"> -Peter Oksen, Senior Programme Officer, Climate Change & Food Security - WIPO Green -Ms. Nanqing Jiang, President, Green Inclusive China -Michal Nachmany, Climate Policy Radar -Catherine Atkin, Director Stanford Codex Climate Data Policy Initiative -Michael Pittelkow, Climate Innovation Marketplace, SAP
11:30 – 13:00	<p>Session 2:</p> <p>Presenting the UGIH Platform</p> <ul style="list-style-type: none"> -Vision guiding the development of the platform -Design of the Platform -Development of the platform 	<p>Moderator: Jennie Dodson, Head of Secretariat, Mission Innovation. Head of International Energy Innovation Engagement, SICE, UK</p> <p>Presenters:</p> <ul style="list-style-type: none"> Dennis Pamlin, Mission Innovation/RISE Martin Wainstein, Executive Director, Open Earth Foundation Caitlin Herren, Director Sustainability Solutions, Amazon Web Services
13:00 – 14:00	Lunch Break	



Potential Partners of Tomorrow – Incubators and Accelerators

14:00 – 15:00	<p>Session 3: Incubators in a 21st century innovation ecosystem delivering 1.5 solutions</p> <p>Context: With an expanded innovation agenda and the urgent need of emission reductions as well as avoided emissions that</p>	<p>Moderator: Dennis Pamlin/Jay Hennessy, Mission Innovation/RISE</p> <p>Speakers/Panelists</p> <ul style="list-style-type: none"> -Ganesh Das/Smita Rakesh CEO/Project Manager: India Incubator -Catharina Sandberg, CEO, LEAD -Sebastian Diaz, Founder, DEEP Ecosystem EU Incubator -Sylvia Stojilkovic, Managing Partner, TechFounders -Simon Bennett, Energy Technology Analyst, IEA
15:00 – 16:00	<p>Session 4: Assessing avoided emissions and 1.5C compatibility of solution providers and enablers</p>	<p>Moderator: Dennis Pamlin/Jay Hennessy, Mission Innovation/RISE</p> <p>Speakers/Panelists</p> <ul style="list-style-type: none"> -Sarah Kearney, Executive Director, Crane -Bram van der Grinten, CEO, Impact Forecast -Gabriela Herculano, CEO, iClima -Roberta Benedetti, Independent Consultant, JustClimate -Luis Neves, CEO, GeSI and founder Digital with Purpose
16:00 – 17:00	<p>Session 5: Accelerating uptake of the next generation of climate solutions: Opportunities in the 4th industrial revolution</p>	<p>Moderator: Dennis Pamlin/Jay Hennessy, Mission Innovation/RISE</p> <p>Speakers/Panelists</p> <ul style="list-style-type: none"> -Charlie Wilsson, Professor. Tyndall Centre for Climate Change Research -Xavier Troussard, Head of the New European Bauhaus Unit - Joint Research Centre at the European Commission -Ganesh Das, Chief, Strategy, Collaborations, Innovation and R&D at Tata Power-DDL and CEO, Clean Energy International Incubation Centre -Marco Duso, principal BCG, and co-initiator BCG Green Ventures -Riyong Kim, Head of Natural Capital and Ecosystems, EEA -Anthony Hobley, Co-Executive Director of Mission Possible Partnership & Executive Fellow at the World Economic Forum, Mission Possible Partnership & World Economic Forum



17:00 – 18:00	Session 6: Scaling up digital innovations for climate action	<p>Moderator: Axel Klaphake, Director, Economic, Social Development and Digitalisation, GIZ</p> <p>Speakers/Panelists:</p> <ul style="list-style-type: none"> -Mark Williams, Practice Manager, Global Knowledge and Expertise World Bank -David Jensen, Director, UNEP Digital Transformation Task Force -Esther Kunda, Director General, Rwanda Ministry of ICT and Innovation -Daniel Schmidt, Chief Sustainability Officer, SAP -Bernhard Kowatsch, Head of Innovation Accelerator, UN-World Food Programme -Mariana de la Roche, Programme Manager, IOTA Foundation and Co-Chair, Social Impact Working Group, INATBA
18:00 – 18:30	Session 7: Standards and our 2050 world	<p>Panelists:</p> <ul style="list-style-type: none"> -Fiona Macklin, Campaign Coordinator, Race to Zero -Scott Steedman, Director-General, Standards, British Standards Institution & VP Policy, ISO -Daniel Barlow, Head of Innovation, British Standards Institution -Nadita Ramachala, Manager, Standardization Division, Trinidad and Tobago Bureau of Standards (remotely) -Zacharia Lukorito, Chief Manager, Kenya Bureau of Standards (remotely) -Chantal Guay, Chief Executive Officer, Standards Council of Canada (remotely) <p>Closing remarks: Massamba Thioye, UNFCCC</p>

FRIDAY 5 NOVEMBER

Innovation at the UN for 10 billion people (10:00 – 13:00) – Moderator Massamba Thioye, UNFCCC/Tom Mitchell, Climate-KIC

10:00 – 11:00	Session 1: Presentations/showcasing	<ul style="list-style-type: none"> -Manfredi Caltagirone, International Methane Emissions Observatory, UNEP -Bernhard Barth Human Settlements Officer Regional Office for Asia and the Pacific & Sub-programme Coordinator (a.i.) Climate Change and Urban Environment, UN Habitat (in-person)
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Session 2: Presentation and Showcasing

11:00 – 12:00	UNIDO	<p>Speakers:</p> <ul style="list-style-type: none"> -Peter Schniering, CEO& Founder, Future Cleantech Architects -Vanessa Voelkel, Deputy Head, UNIDO Investment and Technology -Alois Posekufa Mhlanga, Chief, UNIDO Climate Technology und Innovations
	UN SDG Action Campaign	<p>Moderator: Hannah Messenger, Global Event Strategist, UN SDG Action Campaign</p> <p>Speakers/Panelists</p> <ul style="list-style-type: none"> -Rwodah Ibrahim AlNuaimi, Director of Strategic Partnerships, Qatar Fund for Development -Jean-Betrand Mhandu, Regional Director Africa, earthday.org, Zimbabwe National Coordinator, African Youth Initiative on Climate Change -Samantha Cristoforetti, Astronaut, European Space Agency (remotely)
12:00 – 13:00	Session 3: Assessing avoided emissions and 1.5C compatibility of solution providers and enablers	<p>Moderator: Mario Castro Grande, Senior External Affairs Officer, ITU</p> <p>Speakers/Panelists</p> <ul style="list-style-type: none"> -Susanne Pedersen, Director, UNEP DTU Partnership -Massamba Thioye, Project Executive, Global Innovation Hub, UNFCCC -Jorn Verbeeck, Head of R&I, Global Covenant of Mayors (GCoM) -Philippe Tuzzolino, Vice President, Environment, Orange -Silvio Dulinsky, Deputy Secretary General, ISO -Fitore Pacolli, Member of Parliament and Chairperson, Parliamentary Committee on Agriculture, Forestry, Rural Development, Environment, Spatial Planning, and Infrastructure -Maimunah Jaffar, Director, Iskandar Regional Development Authority (IRDA) and lead Technology & Innovation <p>Closing Remarks: Cristina Buetti, Focal Point on Environment and Smart Sustainable Cities, ITU</p>
12:00 – 13:00		Lunch Break



Need-based solution-oriented approach and GHG accounting (14:00 -16:00)

14:00 – 15:00	<p>Session 4 Deep-dive presentation on the current challenges facing global carbon accounting practices in industrial supply chains, and;</p> <p>how the COMET Framework intends to address these problems by creating a harmonization and attribution framework of supply chain emissions for material and energy supply chains</p>	<p>Opening remarks: Massamba Thioye, UNFCCC</p> <ul style="list-style-type: none"> -Paolo Natali, Principal, Climate Intelligence, RMI -Jon Creyts, Managing Director, Chief Program Officer, RMI -Jordy Lee, Program Manager for the Supply Chain Transparency Initiative, Payne Institute for Public Policy -Anna Stanley, Manager, Climate Action, World Business Council for Sustainable Development -Martin Dietrich Brauch, Senior Legal and Economics Researcher, Columbia Center on -Sustainable Investment -Maria Fujihara, CEO, SINAI Technologies -Marc Johnson, Climate Intelligence, RMI
15:00 – 16:00	<p>Session 5: Consumers-based GHG Accounting on supply chains</p>	<p>Panelists:</p> <ul style="list-style-type: none"> -Martin Wainstein, Executive Director, OEF British Columbia [will display a video] -Catherine Atkin – Director Stanford Codex Climate Data Policy Initiative -Anna Stanley – Manager, Climate Action, World Business Council for Sustainable Development
Youth and gender		
16:00 – 17:00	<p>Session 6: Youth Perspectives on Action for Climate Empowerment & Innovation</p>	<p>Opening remarks: Massamba Thioye, UNFCCC Moderator: Tim Damon (Global Youth Development Institute, YOUNGO ACE working group & ECOS co-focal point)</p> <p>Panelists:</p> <ul style="list-style-type: none"> -Xiye Bastida - Re-Earth Initiative, Fridays for Future NYC leader -Miroslav Polzer IAAI GloCha ' - Resource Mobilization for ACE and roadmap for setting up the GloCha United Citizens Organization for ACE -Dolphine Magero - Global Youth Climate Action Fund, Kenya & ECOS -Eric Steinberger, CEO & Co-Founder, ClimateScience -Sol Moran Broza - Youth engagement in climate action with Music



17:00 – 17:30	Session 7: Tokenization of Green Bond	Moderator: Katherine Foster Video presentation of the product: Bank for International Settlement Genesis project
17:30 – 18:00	Session 8: Video Presentation	Dushan Boroyevich, University Distinguished Professor, Virginia Polytechnic Institute and State University

SATURDAY 6 NOVEMBER

Award Ceremony

12:30 – 13:30	UNIDO Awards	Speakers: <ul style="list-style-type: none"> - Peter Schniering, CEO& Founder, Future Cleantech Architects -Vanessa Voelkel, Deputy Head, UNIDO Investment and Technology -Myrna Bittner, CEO & Founder, RUNWITHIT Synthetics Inc. -Dean Bittner, Founder, RUNWITHIT Synthetics Inc. -Rainer Hoenig, Founder & Managing Director, batteries AMPS GmbH -Gernhard Dust, CEO, PolyCare Research Technology GmbH & Co. -Andreas Kunsmann, COO, PolyCare Research Technology GmbH & Co. -Hua Cao, General Manager of International Business Department, Zhejiang Chint New Energy Development Co., Ltd.
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MONDAY 8 NOVEMBER – CORE-HUMAN NEEDS

Nutrition & Health

10:00 – 11:00	Session 1: Climate resilient crops for future food security and livelihoods	Chair: Judith Batchelar, J Sainsbury plc Speakers: <ul style="list-style-type: none"> -Dr. Aaron Davis, Royal Botanic Gardens, Kew -Dr. Richard Randle-Boggis, University of Sheffield -Dr. Sandra Knapp, Natural History Museum -Claudia Cordero, GIZ/EUROCLIMA+, Bolivia (Remotely)
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11:00 – 12:00	<p>Session 2: Potential for transformative climate action in the nutrition & health value chain</p>	<p>Moderator: Jim Woodhill, AgriFoodNexus Consulting/ Honorary Research Associate, Environmental Change Institute, University of Oxford</p> <p>Speakers: -Oumar N'Diaye, Business Development Director Africa, Nutrition International -Lesley Mitchel, Associate Director, Sustainable Nutrition -Anitha Seetha, Senior Scientist, International Crops Research Institute for the Semi-Arid Tropics -Tom Bruulsema, Chairman of the Scientific Panel on Responsible Plant Nutrition -Jeremy O'Brien, CEO, Psiquantum</p>
12:00 - 12:30	<p>Video Presentations - System change and nutrition:</p> <p>FAO for the future of food and environment.</p> <p>“The Sustainable Wildlife Management (SWM) Programme” (strengthen innovative, community-led efforts to reconcile the conservation of wild species with food security, while at the same time improving local livelihoods).</p>	<p>Introduction by Zitouni Ould-Dada, Deputy Director of FAO's Office for Climate Change, Biodiversity and Environment</p> <p>FAO corporate videos:</p> <p>Video presentation on system change and nutrition -FAO for the future of food and the environment -The Sustainable Wildlife Management (SWM) Programme</p> <p>Introduction by Zitouni Ould-Dada, Deputy Director of FAO's Office for Climate Change, Biodiversity and Environment</p> <p>FAO for the future of food and the environment -FAO and the Global Environment Facility partnering for the future of food and environment -Making livestock production more sustainable -Predicting crises is the future of aid</p> <p>The Sustainable Wildlife Management (SWM) Programme -Introduction to the SWM Programme -Nirina, a Malagasy small-scale businesswoman -Sustainable wildlife management in the Democratic Republic of the Congo -Preserving wetlands with white water lilies in Senegal -Build back better in a post-COVID-19 world</p>



13:00 – 14:00	Lunch Break	
14:00 – 15:00	Session 3: Food chain transformation: taking holistic approaches Nutrition & Health	<p>Opening remarks : Massamba Thioye, UNFCCC</p> <p>Speakers:</p> <ul style="list-style-type: none"> -Marcela Navarro, CEO Project X Global (in-person) -Andreas Zynga, Director for Public Engagement & Communication, EIT Food (in-person) Commissioner Gabriel, EU Commission (remotely) -Kirsten Dunlop, CEO, EIT Climate-KIC (in-person) -Margaret N. Kim, CEO, The Gold Standard Foundation (in-person)
15:00 – 16:00	Session 4: Reducing the food production footprint (through low-carbon practices, circular approaches and enhancing the soil carbon sinks	<p>Opening remarks : Massamba Thioye, UNFCCC</p> <p>Speakers:</p> <ul style="list-style-type: none"> -Cliona Howie del Rio, CEO, Foundation Earth (in-person) -Lisa Sweet, Head of Food System, World Economic Forum (in-person) Executive level, YARA (in-person,) -James Close, Head of Climate Change, Natwest (in-person) -Barbara Baarsma, CEO, Rabo Carbon Bank (in-person) -David Kat, Senior Vice- President, Wasteless (remotely)
16:00 – 17:00	Session 5: How do we address key health and nutrition challenges within 1.5 °?	<p>Opening remarks : Massamba Thioye, UNFCCC</p> <p>Speakers:</p> <ul style="list-style-type: none"> -Saskia Nuijten, Editor-in-chief, EIT Food (in-person) -Jane Alie Liu, Editor, FoodUnfolded (in-person) -Aran Shaunak, CEO, FoodUnfolded (in-person) -Global President Food & Beverage, Unilever -Private sector: Nestle/Danone/Mars -Future Food Markets (remotely) -Anthony Finbow, CEO, Eagle Genomics (in-person)
17:00 – 18:00	Session 6: Broadening the view: landscape approaches to address the tensions between production and conservations	<p>Opening remarks : Massamba Thioye, UNFCCC</p> <p>Speakers:</p> <ul style="list-style-type: none"> -Sara Scherr, President and CEO Ecoagriculture (in-person) -Andy Griffiths, CEO, Nestle UK Limited (in-person) -Joao Camari, Food Systems Program Lead, WWF Int (in-person) -Stineke Oenema, Executive Secretary, FAO, UN Nutrition (in-person) -Jean-Francois Soussana, VP Environment, INRAE (in-person)



TUESDAY 9 NOVEMBER

10:00 – 11:00	Session 1: Climate contribution of digital tech (source of emissions and climate solution provider) Role of decentralized tech as we “electrify everything” Example of green bond tokenization	Moderator: Harald Friedl Speakers: -Alexey Shadrin, EverCity - Steven Haft, Consensy
11:00 - 12:00	Session 2: Systems Change - Climate Chain Coalition	Moderator: Miroslav Polzer, Climate Chain Coalition Panelists: -Tia Kansara, Replenish Earth and Resilience Frontiers (focus on resilience/adaptation and Youth) -Owen Hewlett, CTO, Gold Standard (focus on nextgen MRV system) -Neil Cohn, VP, Chia Network
12:00 – 13:00	Session 3: Measuring and Attributing Climate Contributions: A methodological framework for scope 3 activities indirectly reducing GHG emissions	Opening remarks: Massamba Thioye, UNFCCC Speakers: -Navraj Singh Ghaleigh, Edinburgh Law School -Justin Macinante, Edinburgh Law School -Ashley Lloyd, Business School, University of Edinburgh -Adrian Jackson, EPCC, University of Edinburgh -Colin MacIsaac, CEO, Bertling
13:00 – 14:00	Lunch Break	
Session 4: Cities Mission GCOM Event		
14:00 – 15:30	Introduction -Welcome (video) message Michael Bloomberg -Welcome message Frans Timmermans	<i>Michael Bloomberg</i>
	Panel Discussions on the role of cities in the energy transition: Cities Mission	-Gregor Robertson, GCoM Global Ambassador (presentation of the mission) -Matthew Baldwin, Deputy Director General, Mobility and Transport, European Commission (in-person) -Abigail Binay (GCoM board member, Mayor of Makati – Philippines)



14:00 – 15:30	Panel Discussions on the role of cities in the energy transition: Mission Innovation	- Jennie Dodson, Mission Innovation Secretariat (MI 2.0)
	Panel Discussions on the role of cities in the energy transition: City Voices	- Mayor from India (Mumbai / Link with UNEP Urban Energy Compact)
	Panel Discussions on the role of cities in the energy transition: National voices	- Mayor from India (Mumbai / Link with UNEP Urban Energy Compact)
	Panel Discussions on the role of cities in the energy transition: Expert Input	-IEA (insights from Empowering Cities for a Net Zero Future: Unlocking resilient, smart, sustainable urban energy systems) -IRENA (insights from the recently launched report on sector coupling) -Student Energy (Global Solutions Portfolio)

Session 5: Green Powered Future Mission: Launch of the Joint Roadmap of Global Innovation Priorities

15:30 – 16:00	High level introduction by senior officials	DDG Linhao Chen (MOST) Stefan Raimondi (MITE) Damitha Adikaari (BEIS)
	Power Mission in Brief	Luciano Martini, Mission Director, RSE, Italy
	Landscape and gap analyses, consultation process with stakeholder	Charmalee Jayamaha, BEIS, UK
	The R&I Themes and related innovation priorities, VRE integration	Yibo Wang (IEE CAS, China)
	Unveiling of the Joint Roadmap of Global Innovation Priorities	Luciano Martini, RSE. Italy
	Introduction to the Panel discussion	Moderator: Jon Saltmarsh, BEIS, UK
	Short Statement on the roadmap from Private Sector representatives	Speakers: China: Dr. Cao, CEO, Goldwind Italian: Vivianna Vitto, Head of Market Studies, EnelGI&N United Kingdom: Sebastiaan Van Dort, Associate Director, BSI
	Panel discussion	Moderator: Jon Saltmarsh (BEIS, UK) Speakers: - Dr. Cao, CEO - Goldwind - Viviana Vitto, Head of Market Studies - EnelGI&N - Sebastiaan Van Dort, Associate Director – BSI
	Final remarks and the way forward	Luciano Martini (RSE, Italy)



Session 6: Nutrition & health core-needs in Latin America

16:00 – 16:05	How EUROCLIMA+ addresses country demands with an innovative approach?	Opening remarks: Carlos Ruiz-Garvia, UNFCCC Introduction: Carles Puigmartí-Borrel, European Commission, Belgium (In-person)
16:05 – 16:15	The resilient food production sector in Latin America: Experiences from the EUROCLIMA+ program and the needs for innovative solutions for nutrition, health and resilient crops	Claudia Cordero, GIZ/EUROCLIMA+, Bolivia (Remotely)
16:15 – 16:25	Promoting the Heritage of Our Ancestors: Resilient Production, Marketing and Consumption of Cañahua and Tarwi	Rodrigo Michel, SWISSCONTACT, Bolivia
16:25 – 16:35	Biodiversity and best practices in climate-smart agriculture to improve the resilience and productivity of family farming in potato-based Andean food systems	Stef de Haan, CIP-Andean Initiative Director, Perú
16:35 -16:45	Q&A Key messages	Claudia Cordero, GIZ/EUROCLIMA+, Bolivia (Remotely)



16: 45 – 17:25	Health and Climate:	<p>Moderator: Daniel Buss, The Pan American Health Organization (PAHO) / World Health Organization (WHO) (remotely)</p> <p>Panelists (remotely): Welcoming: Climate Change, SDGs and health in the Andean Region, • Pier Paolo Balladelli – Subregional Program Director South America – Pan American Health Organization (PAHO/WHO) • Maria del Carmen Calle – Executive Secretary Organismo Andino de Salud Convenio Hipólito Unanue (ORAS/CONHU) Setting the scene: climate change and health in the Americas – implementation progress, challenges, and opportunities for the way forward • Daniel Buss – Advisor on Climate Change and Health – PAHO/WHO, Washington DC Advances and challenges for the implementation of the “Andean Action Plan on Health and Climate Change” • Bertha Luz Pineda Restrepo – Coordinator Climate Change and its impacts on health – ORAS/CONHU NDC and health sector’s adaptation: the case of Peru • Ivonne Benites Toledo – Coordinator of Climate Change – Ministry of Health, Peru Estimating health Co-benefits of the implementation of the Colombian NDC • Diego Moreno Heredia – Specialized professional of the Subdirection of Environmental Health – Ministry of Health and Social Protection, Colombia</p>
17:25 – 17:30	Closure	<p>Discussion and comments for session 6: Carlos Ruiz-Garvia, UNFCCC</p>
17:30 – 18:00	Session 7: Digital technology to support climate and sustainability actions	<p>Moderator: Massamba Thioye, UNFCCC</p> <p>Panelists: -Jeremy O’Brien, CEO, Psiquantum -Sтивен Moore Sustainability officer, GSMA</p>

Dinner Workshop - Competitions and an expanded innovations agenda for accelerated uptake of 1.5 C innovations



18:00 – 18:10	Introduction an expanded innovation agenda and the UNFCCC innovation Hub	Dennis Pamlin, Mission Innovation Massamba Thioye/Carlos Ruiz-Garvia, UNFCCC
18:10 – 18:50	World Leading competitions and the role of cities	Introduction Earth 300 Aaron Oliviera, EARTH 300 Tony Verb, Carbonless Asia Challenge Introduction Climate Smart Cities Challenge by Nesta and Viable Cities: Kathy Nothstine, Nesta Challenges Bernhard Barth, UN-Habitat Regina Summer, Vinnova
18:50 – 19:00	Round table discussion	Moderator: Åsa Minoz, Innovation Strategist, Viable Cities/ Dennis Pamlin, Mission Innovation

WEDNESDAY 10 NOVEMBER – CORE-HUMAN NEEDS

Access

10:00 – 11:00	Session 1: Addressing access in cities	Moderator: Jorn Verbeeck, Head of R&I, Global Covenant of Mayors (GCoM) Speakers: -Jelmer Hoogzaad, Founder, Shifting Paradigms -James Ehrlich, Founder, ReGen Villages Holding - Regenerative and self-sufficient human settlements -Dennis Pamlin, Head/Senior Advisor, Mission Innovation Rise -Catherine Atkin, Director Stanford Codex Climate Data Policy Initiative
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11:00 - 12:00	Session 2: Green Hydrogen: Global vision of Low Carbon Hydrogen in Latin American and the Caribbean and its perspectives.	Opening remarks: Carlos Ruiz Garvia, UNFCCC
	-IEA Presentation on its recent report “Hydrogen in Latin America”	Moderator: Alfonso Blanco, OLADE Executive Secretary
	-IDB Presentation on Development and growth of Green Hydrogen in Latin America and the Caribbean.	Panelists:
	-What is the national strategy on the development of low carbon/green hydrogen and what results have you achieved?	-Dr. José Miguel Bermudes Menendez, -Hydrogen Analyst, Energy Technology Policy Division, IEA.
	-What are the political, technical and financial requirements of your country for the mass production and use of low carbon/green hydrogen in the public transport sector of your country?	-Representative from the Inter-American Development Bank -Representative from Argentina. -Representative from Brazil: André Luiz Rodrigues Osorio, Director Department of Information and Energy Studies, -Ministry of Energy and Mines. -Representative from Colombia. -Representative from Panama.
12:00 – 12:30	Fire chat: Human core-need clothing	- Laila Petrie , CEO 2050, Supporting Organization of the Fashion Industry Charter - Katherine Foster , OEF
13:00 – 14:00	Lunch Break	
Shelter (Climate-KIC)		
14:00 – 15:00	Session 4: Shelter as a human need and expression of identity Focus: Mitigation through nature-based solutions and buildings that act as carbon sinks	Panelists: -Patrycja Slawuta, Founder and CEO, Self-Hackathon -Thomas Hübl, CEO Sharing the Presence GmbH -John Onians, Director, Sainsbury Centre for World Art
15:00 – 16:00	Session 5: Shelter as a climate adaptation and crisis action Focus: Adaptation through shared meaning and value	-Alastair Parvin, Founder and CEO, Wikihouse -Shigeru Ban, Founder, Shugeru Ban Architects -Marteen Aals Van, Climate Risk Director, Red Cross Red Crescent Centre



16:00 – 17:00	Session 6: Shelter as a climate adaptation and crisis action Focus: Crisis response that fulfils basic human needs	-Hans Joachim Schellnhuber, Chair of Board, Bauhaus der Erde/New European Bauhaus -James Drinkwater Built by Nature/Laudes Foundation -Marco Poletto, Director and co-founder, ecoLogicStudio -Martin Forsen, Burapha Wood
17:00 – 18:00	Session 7: Planet as shelter Focus: Planet as environmental regeneration for environmental regeneration	-Federica Di Palma, Professor of Biodiversity, Earth Biogenome Project -Eva Gladek, Metabolic -Bernard Barth, Climate Change Programme Coordinator, UN Habitat

THURSDAY 11 NOVEMBER – INNOVATION AVENUE

Broadcasting Need-based Climate Solutions

10:00 – 11:00	Session 1: Innovations in measuring biodiversity as Nature's carbon storage to inform future initiatives	Opening remarks: Massamba Thioye, UNFCCC Speakers: -Prof. Thomas Meagher, University of St. Andrews -Dr. Justin Moat, Royal Botanic Gardens, Kew -Dr. Hugh Mortimer, Science and Technology Facilities Council -Rachel Purdon, RBG Kew -Dr. Laura Meagher, Technology Development Group
11:00 – 12:30	Session 2: Innovative Enabling Climate Solutions: -Circular Economy -Innovative technology -Innovative financial instruments	Moderator: Massamba Thioye, UNFCCC Presenters: -Mike Hayes, Global Head of Climate Change & Decarbonization, KPMG – Developing structured financial solutions -Pablo van der Lugt, Senior Lecturer TU Delft, Sustainable low carbon building and materialization focusing on circularity in the built environment and BIO-based materials, engineered bamboo -Sophie Odupoy, KOKO networks - Ethanol stoves, ethanol distribution using IOT technology and innovative approaches -Jacques de Vos, Mezzanine CEO, Vodafone subsidiary -Agri tech and its environmental opportunities (and challenges to overcome) -Jelmer Hoogzaad, Founder, Shifting Paradigms



12:30 - 13:00	Session 3: Presentation of the Platform	Martin Wainstein, Executive Director, Open Earth Foundation
13:00 – 14:00		Lunch Break
14:00 – 15:00	Session 4: Addressing the Climate Change Data Gap	<p>Moderator: Xiaochen Zhang, Principal Manager, AWS</p> <p>Speakers:</p> <ul style="list-style-type: none"> -Sherry Madera, FoSDA Chair & Chief Industry & Government Affairs Office, London Stock Exchange (in-person) -Richard Mattison, FoSDA Data Council Chair, President, Sustainable1, S&P Global (in-person) -Ana Pinheiro Privette, Senior Program Manager, Amazon Sustainability (in-person) -Truman Semans, Founder and CEO, OS-Climate (remotely) -Martin Wainstein, Executive Director, Open Earth Foundation (in-person)
15:00 – 16:00	Session 5: Climate Innovation for Central Banks and Supervisor	<p>Moderator: Anastasia Raissis, Director of Global Cybersecurity and Regulatory Policy, Worldwide Public Sector, AWS (remotely)</p> <p>Speakers:</p> <ul style="list-style-type: none"> -Caio Fonseca Ferreira, Deputy Head of the Financial Supervision and Regulation division, IMF (remotely) -Liam Maxwell, Director of Digital Transformation, AWS Worldwide Public Sector (in-person) Moles Fanjul Patricia, Banco de México (in-person) -Benoit Coeure, Head of the BIS Innovation Hub, BIS (Remotely) -Andrea Oconitrillo Rojas, Climate Change Strategy Group, Banco Central de Costa Rica (remotely)
16:00 – 17:00	Session 6: Reshaping fintech ecosystems for new climate business models to meet core needs	<p>Opening remarks: Massamba Thioye, UNFCCC</p> <p>Moderator: Katherine Foster (Social Alpha Foundation Fellow and Open Earth Foundation Community Director)</p> <p>Speakers:</p> <ul style="list-style-type: none"> Aiaze Mitha, Digital Ambassador UNCDF Toni Caradanno, Porinni Foundation Sofie Blakstadt, HiveOnLine Alex Gordon-Brander, teratree Mihai Hrimiuc, Carbon Base and Project ARK
17:00 – 18:00	Video showcasing	



Dinner Workshop: Culture and Communication as Enablers for a 1.5C

18:00 – 20:00	Introduction an expanded innovation agenda and the UNFCCC Innovation Hub	Dennis Pamlin, Mission Innovation Massamba Thioye/Carlos Ruiz-Garvia, UNFCCC
	Culture and global sustainability -Introduction with Deep Time, Virpi Pahkinen -Reflections about culture and a deeper perspective on climate change and global sustainability	Virpi Pahkinen
	Music and global sustainability -The role of platforms, Spotify -The role of providers of tools/instruments, Klevgrand	-Hanna Grahn, Sustainability Lead, Spotify -Ebba Grythberg, Global Sustainability Manager, Spotify -Tobias Engström, CEO & Co-founder, Klevgrand
	Movies and global sustainability -The role of platforms, Netflix	Emma Stewart, Sustainability Officer, Netflix
	Regenerative lifestyles and empowerment of citizens The role of outdoor living	Eva Karlsson, CEO, Houdini
	Guiding and supporting companies and organizations to become solution providers -Climate opportunity Innovation -Exponential Change	-Marco Duso, Principle, BCG -Johan Falk, Lead author, 1.5 °C Business Playbook
	Roundtable discussions	Moderators: Dennis Pamlin and James Arbib



FRIDAY 12 NOVEMBER

Closing Session

11:00 - 11:10	Opening remarks	Massamba Thioye
Incredible 2-week sessions with fantastic discussions, debates on core human needs, enablers and solutions for 10 Billion people. Reflections of the key messages received.		
11:10 – 11: 20	Cities	Climate-KIC
11:20 – 11:30	Digital Finance	Open Earth Foundation
11:30 – 11:40	Digital for Climate	European Commission
11:40 – 11:50	Potential partners for tomorrow (incubators and accelerators)	Mission Innovation RISE
11:50 – 12:00	Innovation for Climate and SDGs at the UN including youth and gender	UNFCCC
12:00 – 12:10	UGIH Video	
12:10 – 12:30	Overall Reflections on inputs received on core-needs and climate solutions: -Open discussion -Take away / key messages From 70+ sessions 1-12 Nov.	UNFCCC/Partners
12:30 – 12:45	Project action plan: -Call for experts -Platform -Next steps -Reporting -Ideas for COP27 -Debriefing	UNFCCC/Partners
12:45 – 13:00	Closing	Massamba Thioye



DAY#1 MONDAY, 1 NOVEMBER 2021

Session 1: Opening Session

Description

This high-level session featured statements from various UNFCCC Global Innovation Hub partners. Opening remarks were delivered by Daniele Violetti, Senior Director, UNFCCC. This was followed by presentations from core partners Climate KIC, Mission Innovation and Open Earth Foundation, who expressed their reasons for engagement, expectations, and contributions to the initiative. In their discussions, they reflected on the core paradigms and innovative thinking that the UGIH introduces. This session was then followed by a high-level dialogue between a panel of ministers and mayors who shared their lessons and ideas on how best to bring scalable innovation to all global sectors.

Massamba Thioye, UNFCCC:

Massamba introduced the project noting that the UN Climate Change Global Innovation Hub is an innovation space with an aim to expand the approach to climate solutions. The UNFCCC Global Innovation Hub seeks to promote transformative, need-based and solution-oriented approaches. The goal is to leverage the convening power of the UN to create new, cross-disciplinary and cross-sector connections in the interest of facilitating solution-providers and enablers. For too long, our responses to climate change have been focused on what is feasible, not on what is necessary. The UNFCCC Global Innovation Hub embraces moonshot thinking – an approach that goes beyond what we see today and in which truly transformative change will occur. It will provide an expanded innovation space in which this large-scale coordination, collaboration and cooperation can occur.

Kirsten Dunlop, CEO of Climate-KIC:

Kirsten expressed goals of Climate-KIC to foster a regenerative relationship with our planet; creating a world in which every person gives more back to the earth than they take. These goals connect strongly with the Global Innovation Hub's emphasis on transformative change and solution-building to sustainably meet human needs.

Dennis Pamlin, Senior Adviser at Mission Innovation:

Dennis expressed excitement about collaborating with the UGIH to connect solution providers with solution enablers, especially in previously underused sectors such as finance, communications, and media. As well, Pamlin expressed gratitude toward the drive of the UNFCCC Global Innovation Hub moving away from a 'carbon discussion' to a 'human discussion' – he explained that climate change, at the end of the day, is not an accounting issue, and not purely an issue of approaching net-zero, but of how we can "provide welfare to 11B on this planet," addressing human needs in this growing population.

Martin Wainstein,

Executive Director of the Open Earth Foundation:

Martin stressed the need to leverage 'systems thinking to break away from fragmentation'. The Open Earth Foundation aims to create better and more powerful earth systems governance and management through leveraging emerging digital technology, open digital infrastructure and standards, and large-scale collaboration – the 'most important human technology'. Wainstein expressed excitement for the unique nature and grand scale of the Global Innovation Hub, as well as his support to move innovation away from competition toward collaboration – a goal that the UNFCCC Global Innovation Hub seeks to address.



Mayor Lee Jae Joon of Goyang City :

provided a keynote address presenting the city as a core and strategic global partner that might be used as a model city for on-the-ground innovation for thriving cities, socioeconomic equality, and alignment with the UGIH objectives. George Heyman, Minister of Environment, British Columbia shared the history of the province as a pioneer in carbon taxation, and the evolution of its program that particularly liaises with the metropolitan area of Vancouver.

Ilias Iakovidis, Advisor European Commission:

Ilias emphasized the importance of Digital Innovation as an all-encompassing layer for entities and disciplines to collaborate while bringing about economic development.

Gregor Robertson, Global Ambassador for the Global Covenant of Mayors for Climate and Energy

Gregor introduced the Global Covenant of Mayors that represents 11000 cities; the largest alliance represented by a billion people and brings a strong voice for the importance of innovation, finance, and turning the tide on climate change in the cities of the global south and developing countries.

Session 2: Subnational and City Government Statements

Description

In this session, Kirsten Dunlop of Climate KIC, Mayor Lee Jae Joon from Goyang City, Mayor Kennedy Stewart from Vancouver, Councilor Angus Millar from Glasgow, and Governor João Doria from São Paulo discussed achievements and future work on climate innovation. The speakers emphasized the importance of sub-national and city level planning and climate action.

Goyang City: Mayor Lee Jae Joon noted that the city is directed towards carbon neutrality, green space conservation, awareness, and education, and all this development must begin with its citizens. He spoke about targets and tracking, public-private partnerships in governance, carbon sinks and Green Housing. Goyang City sets high targets like reducing 32.8% GHG emissions and committing to 92 different projects aimed at carbon neutrality. With public private partnerships, the city was able to achieve several things such as the Citizen's Action Coalition which is a constantly growing community geared towards carbon neutrality and multiple MoUs signed for plastic reduction and Green Finance. They are focusing on carbon sequestration through natural resources. This is seen through the Janghang Wetlands, declaring the Right of the Tree where trees are treated as subjects and other green space policies. Mitigation in Housing is also an important area in trying to establish a green city. Green housing, renewable energy to public housing complexes, and improving the

independence rate of solar power. Another important measure is the Empty Space in the centre of Goyang City where they have promised to not develop for the next 30 years in the interest of future generations.

Vancouver: Mayor Kennedy Stewart spoke about disruptive innovation, regulation in growth and tech sector and about reconciliation with indigenous persons. It is only through disruptive innovation that will meet our aggressive goals so one way forward is to rework the tools we have to spur innovation and partnerships between government and business. He then discusses how regulation can be used to drive clean tech growth and create a local business ecosystem and strong supply chain. This is then applied in green housing such as the Green Building Code which requires all new buildings to be zero emission by 2025 and existing buildings to cut emissions by 50% by 2030. And such projects will be achieved by using low carbon materials such as mass timber greatly reduces a buildings carbon footprint generates less polluting construction sites



while supporting the local forest industry. He then talks about the importance of reconciling indigenous populations along with the fight against climate change. He believes Vancouver provides a blueprint that promotes disruptive innovation by combining the strengths of business with the procurement power of government that puts reconciliation and equity at the same level as sustainability.

Glasgow: Councillor Angus Millar stressed the need to fundamentally change the type of discussions we have about climate change by challenging structures and core needs of cities. He argues that cities are easier to transform and should do so ahead of the rural and larger areas of the country. Glasgow has reduced emission by 41% since 2006 and will continue to do so. It will do so by encouraging the private and third-party sectors, focusing on carbon sequestration through nature and investing in green funds. We need to re-imagine and redesign space in the city fundamentally

to effectively deal with climate change by nurturing innovation and exploring new solutions within the city

São Paulo: Governor João Doria noted that achieving sustainable development in cities, adjusting economic growth with chart creation, ensuring income distribution and access for the most vulnerable to urban public goods is challenging. It became even more challenging with the COVID-19 Pandemic. However, Sao Paulo is still proudly facing global warming challenges with ambitious agendas, low carbon economic development, resilient municipality programs, investment in bio-economy, and sustainable transportation. They have signed several instruments for green energy and carbon neutrality and a promise for 62% of the energy matrix from renewable sources. It is important that local governments from several continents share our experiences with innovations in public management aligned with the needs of the common future.

Session 3: Fire chat on system change and climate and SDG action

Description

This session featured a dialogue between Massamba Thioye, UNFCCC, and Caitlin Herren, Director of Sustainability Solutions, Amazon. It explored how the private sector can approach and manage sustainability issues, using Amazon as an example.

Radical collaboration and partnerships: Caitlin Herren asserted the need for radical collaboration and partnerships between a wide array of actors including the private sector, sub-national and national governments, NGOs, civil societies among others, in order to avert the global climate crisis. Collaboration, knowledge sharing, and collective actions are all vital and we have demonstrated our experience working in collaboration through the climate pledge, Race to Zero, and the LEAF Coalition.

The strategic role of the UGIH: Caitlin Herren explained that UGIH has a unique opportunity to empower sub-national and national governments in identifying and adopting need-based solutions. UGIH is the best platform to connect potential users and technologies fit for their purposes.

Need for bold commitments and everyday actions: Caitlin Herren noted to tackling the global climate crisis will require a combination of big and ambitious commitments and everyday actions. Commitments in everyday actions have the power to avert crisis but also to build a more breathable and livable planet. Amazon intends to be at the forefront of that change, not only through actions driving change within the company but by also extending those solutions and strategies out to their customers, partners, and other collaborators. She added that Amazon is also serving as a catalyst to help send and demand signals to markets, to drive faster transformations towards a low carbon economy for example through the Climate Pledge.

Session 4: HL Dialogue on “System change and climate innovation in supply chain and financial systems”

Description This high-level session featured statements followed by a dialogue on system change and climate innovation on supply chain and financial systems.

Marco Alverà CEO SNAM:

Stressed that getting to net-zero will require a lot of rethinking on where we get energy, how to transport/store it, and how to end up with a cheaper and more secure energy system. As an example, he noted that SNAM is doing so by aiming to transform the energy system with green hydrogen, and making it a cheaper option than coal, with solutions such as using existing natural gas reservoirs for hydrogen storage. Marco explained how net-zero shipping by companies like Amazon can be the first step in the consumerization of CO₂; by labelling all products with carbon information, getting CO₂ from the gigatons to the pounds (£), and into pockets.

John Doerr, Chairman of Kleiner Perkins:

Noted that the same climate change crisis that imperils the planet is the greatest economic opportunity of the 21st century. He explained that according to the IEA the global shift to clean energy will require US\$4tn a year for the next several decades but the social cost of carbon is US\$10tn annually. So, there is US\$6tn in savings tied with action to prevent more of the impacts we have seen like the flooding in Europe and Hurricane Irma. It is cheaper to save the planet than it is to ruin it, and this difference in costs is described by John as the ‘green discount’. The most effective short-term action is to invest in, scale up, lower the cost of, and improve the technologies of today.

Jules Kortenhorst, CEO RMI:

Stressed that the innovations needed are not specific technologies but a whole system change. We need to move the current system from a chicken and egg problem (individual actors waiting for action from other actors e.g. sustainable fuel investors, aviation fuel companies, Airbus developers, airports etc.) to

working together for systems change. Jules noted that these whole-system change partnerships are required to create a market move. It is key to have price on green premiums so we can start pushing them down: For instance, creating tickets where you buy a premium for sustainable aviation fuel.

Sandrine Dixon Declève, Co-President, Club of Rome/ Chair of the European Commission Expert Group, Economic and Societal Impact for Research and Innovation (ESIR)

Stressed that technology alone is not going to save us. True systems thinking is the only way in which we can tackle climate change. She emphasized that there is a need of shifting to an economy that services people rather than profiteering and also noted the need of moving beyond GDP growth as a measurement of human development. Innovation must be tied with thinking about social and environmental indicators, not just economic growth indicators. We need to shift the economy to service all 3 Ps (People, Planet and Prosperity). To do so governance, economic and financial innovation alongside technological innovation is key.

Rachel Kyte, Member of the CPI Board and Dean of the Fletcher School at Tufts University:

Noted that innovation is already here, including from the bottom-up. There is a need of knitting together bottom-up innovation starved of funding to the financial announcements of COP and top-down innovation through policy. Policies need guardrails for justice and accountability and must align with the timespan of change required. Public money and policies need to support innovation, this means an upfront investment. To incentivize this, we need to shift the narrative of ‘costs’ of action/inaction to a focus on the benefits of action.



Martin Lundstedt President and CEO, AB Volvo :

Stressed that structural change is essential to keep Volvo competitive environmentally, economically, socially, ethically. In short, Volvo must be considerably more sustainable; it is heading this way through innovating in batteries fuel cells and charging infrastructure and overriding the chicken and egg problem described by Jules.

Leyla Acaroglu, UN Champion of the Earth 2016:

Noted that design is the underlying driver/force in the world. The current problem is overconsumption due to human desires. A systems perspective identifies how we do not value nature, so we therefore exploit it. The current global system is built upon waste, which drives further destruction. Resultingly, design and consumption are crucial – we need to start by designing circular products and identifying new ways for valuing functionality to tackle the notion that waste is an incentive. Doing so involves changing the ways we value nature and products that come from nature i.e. everything. We cannot afford to only be thinking about carbon in plane journeys and obvious emissions-producing activities, but for everything, even the websites we visit.

DAY#2 TUESDAY, 2 NOVEMBER 2021

Session 1: Global action: Cities mobilizing urban transformation

Description In this session, panelists explored strategies, challenges, and solution-oriented approaches to cities mobilizing urban transformation. Radical cooperation between cities, green grids, education and entrepreneurship, and the restructuring of financial flows were the main focal points of the discussion.

Radical cooperation between cities:

Rogier Vandenberg, CEO of World Resources Institute, asserted that cooperation between cities is necessary to exchange new and innovative methods on how to deal with financial challenges. Through comparisons, cities can assess how others are progressing and what types of challenges they are facing. Through exchange, cities can obtain insight as to how investments can be scaled up in the future.

Kirsten Dunlop, CEO of Climate-KIC:

noted that Spanish cities have formed an alliance and act together on issues regarding green changes within their cities. They have realized that they can only solve challenges if they connect on a national, as well as on a regional level to demand the required changes in policy and funding needed for more sustainable cities. Given that the issues cities face in their physical spaces are similar, their requests

on a national level are similar and can therefore lead to a greater change in the national system. Ms. Dunlop also emphasized that we need new innovative solutions in all sectors that allows for a holistic transformation of entire systems. Currently, when we look at big cities, they create solutions that are not holistic and thus do not allow transformative changes. Solutions from different sectors need to be connected to ensure a reconfiguration of the entire system. We should not only ask the question of what is possible but more importantly what is needed.

Green grids:

Matthew Baldwin, Deputy Director-General, Mobility and Transport, European Commission, stressed that cities can capture their carbon more easily if they green their grids and allow smaller communities to take control over their power grids. By giving the control to smaller communities they become part of the whole



transformational experience and will eventually also experience the benefits that accompany greener grids. Mr. Vandenberg agreed with Mr. Baldwin by stating that decentralized grids are essential as they give ownership of the process back to the people, which leads to greater social commitment, trust and inherent will to facilitate a greener transition. If the process is not started in a bottom-up fashion, there will be no substantial behavioral change within communities.

Education and entrepreneurship:

Mr. Vandenberg emphasized that education is crucial, especially in the areas of mitigation and adaptation actions of climate change. There are an incredible number of social entrepreneurs out there that can create resilient plans for their own communities. For this, we need to bring climate-resilient education offers to the communities. In theory, this sounds like a very simple idea, however, in its realization, this can be quite complex.

Restructuring of financial flows:

Ms. Dunlop underlined that in many cities finance is only flowing for single projects, however cities require funding for portfolios that allow existing initiatives to be funded within one frame. This portfolio approach allows cities to connect and cooperate with each other,

while ensuring a flexible financial flow. Having a holistic portfolio of all projects within a city allows that city to better assess which effective alternatives could be implemented to decarbonize their city. Overall, there needs to be a shift in thinking within the investment sector. Investors should no longer be investing in single projects, but rather in future markets. Mr. Baldwin agreed that cities cannot finance the entire shift on their own, and therefore external financial resources are required.

Ms. Dunlop went on to note that if we create multiple solutions that address multiple needs, we are dealing with complex capital flows and business models that have multiple benefits. Community benefits foster a fundamental change in how a city thinks. A challenge is that we don't have government and financial structures that allow us to do this easily. We need to push for inter-sectoral challenges to start breaking down the silos and uniting the silos. City governments require support for their portfolios, in cooperation with non-governmental organizations, small and mid-size enterprises, and the whole community to generate genuine partnerships. Mr. Vandenberg also highlighted the need to enhance collaboration, as national governments play a large role in decisions being made regarding finance, taxation, and bonds.



Session 2: Social and governance innovation

Description

In this session, panelists showcased their ongoing projects in governance and innovation, while emphasizing the need for inter-sectional cooperation and collaboration. The ongoing projects highlighted that successful strategies call for the radical collaboration of citizens and cities, and that transformative politics requires transformative governments.

Ongoing solution-oriented projects in governance and innovation:

Valentina Orioli, Urban Mobility and Infrastructure Councilor, highlighted how Bologna strives to improve common governance in their metropolitan area, which includes 55 municipalities. The commune of Bologna created a climate citizens' assembly in 2019, which facilitates a participatory process first led by municipal counsellors. A negotiation table was then created, which includes local authorities, economic and social organizations, activists, environmental groups, and technicians. Together, the climate citizens' assembly develops new strategies for urban development, which incorporate action plans on energy and climate. Each assembly is adapted to the exact circumstances of the city. Along with contributing to civic imagination, the assembly fosters individuals to become more conscious of the areas they reside in.

As identified by Demos Helsinki, Juha Leppänen presented two gaps to solve the climate crisis. These include a gap in imagination and a gap in governance. Demos Helsinki

has built a global community to bring together organizations, activities, and citizens from all over the world to think collectively to envision a better future. Individuals were able to imagine their lives in a 1.5-degree world as a key learning from the project. On the quality of governance, participants agreed that it is important to understand how climate policies are put together. This project brought participants to question what governance should look like in a 1.5-degree world.

Alexa Waud, Climate and Democracy Specialist expressed how the Democratic Society works at the local level within the European Union and the United Kingdom to create more participatory and deliberate government spaces. To ensure a just transition, it is key to involve all individuals from a society in transitional and decision-making processes. The Scotland Climate Assembly provides an excellent example of this, where for eight weeks more than 100 citizens collaborated and discussed ways to achieve a just transition. Without citizen participation, we risk not achieving the quality of climate-just cities which are

needed to ensure sustainability.

Inter-sectional cooperation and collaboration:

Agnes Chimbiri, Governance Portfolio Manager, UNDP stressed that there is a great need for inter-sectional cooperation or portfolio cooperation, as currently many are working within their silos. Key partners for a portfolio approach are local governments and national climate commissions. It is crucial to empower local councilors and engage citizens to equalize power imbalances and ensure that duty bearers live up to the needs of citizens. To establish a solid digital infrastructure, diverse stakeholders need to be connected to work on innovative solutions and projects. Cooperation should not only happen between the private sector and national governments, but also at the local level. It is only when local governments engage directly with the private sector that they can establish solutions tailored to their specific communities. Moreover, it is important that within governmental structures, policies are aligned so that local authorities are aware of what is happening on the national and regional levels.



Anna Richardson, Councilor in Glasgow, noted that it is crucial as a city to facilitate discussions on policy development. Citizens becoming an active part of transformational processes assist us in identifying where expertise already lies within our communities. Citizens know best where they require support in their everyday lives. Through cooperation and collaboration, we have a real opportunity to draft these experiences together, thereby removing barriers.

Session 3: Capital and finance innovation

Description In this session, panelists addressed challenges to mainstream financing, along with providing their insights on strategies to stimulate capital and financial innovation.

Challenges to mainstream financing: Jeremy Gorelick from the Green Finance Institute, asserted that mainstreaming climate finance is not yet being materialized for cities, as many city leaders prioritize other sectors. However, climate considerations do not only address one silo but instead all parts of a city. For this reason, it is important to consider the climate in all decisions made. Every aspect of a city's budget should address sustainability and climate change.

Divyata Ashiya, ex COO Goldman Sachs Merchant Banking Division International, stressed that there has been a focus on project-based financing for too long. Financing traditional infrastructure is different to financing change for entire communities and diverse systems. Rather than working in silos there needs to be a shift towards more partnerships. Complex issues require long-term relationships and solutions which are creative and innovative. Tamara Singh, Board member of the People Centered Internet and Advisor at OMFIF, also backed up this argument by stating that relationships at all levels need to be deepened, as there is currently a gap in language between those providing the funds and those seeking to deploy them.

Ed Cox, Director of Inclusive Growth & Public Service Reform at West Midlands Combined Authority, affirmed that it is easier to get traditional infrastructure financed by our national government than green infrastructure. For this reason, we need to become

innovative and realize how we can include green components into traditional funding schemes. Private finance is also required in order to lead investments. Massamba Thioye also stressed the need for disruptive leadership to directly address such challenges. Blended financing: Mr. Cox noted that there is a rapidly growing low-carbon sector with many innovative ideas, however, the required financial strategies for these projects are complex. When it comes to net-zero emissions, a blended finance model incorporating both public and private funds is needed.

Green and grey infrastructure and green bonds: Ms. Ashiya underlined that investors will have the best outcomes and returns if green and grey infrastructure is mixed. Other alternatives could include local green bonds, where individuals invest their own money to facilitate a green and just transition.

Risk and return management: Mr. Cox and Ms. Ashiya stressed that risks need to be shared between the investors and cities. Currently investors are only interested in returns, while cities absorb the associated risks. We therefore require an ecosystem in which financial and social returns are recognized and established. Ms. Singh noted that it is important to illustrate that returns can be made from green climate funding, thereby adding value to something that has not traditionally been valued. Finance institutions have previously been appreciated for stability, but not for driving innovation.



Financing in the Global South: Mr. Gorelick highlighted that cities, especially in the Global South, often face challenges in securing finance. These cities, however, have great aspirations to invest in green solutions but the challenge is to facilitate this. Here we see a reluctance on the part of investors, as they may not achieve the returns that they seek. Furthermore, in the Global South, it often occurs that cities step away from green climate smart investments to prioritize the delivery of essential services, which cannot always be guaranteed. Mr. Gorelick underlined that investing in green climate smart solutions cannot be a question of tomorrow, but rather a question of today.

Session 4: Policy innovation

Description When we talk about carbon neutrality and policy, we need to examine the perspective of cities, and specifically how the needs of citizens can be innovated through a carbon-neutral lens. In this session, panelists addressed how such policy innovation can transpire through citizen participation, along with touching upon the role of technical innovation.

Policy innovation through citizen participation:

Santiago Saura Martínez de Toda, Councilor for International Affairs and Cooperation with the City of Madrid, noted that when establishing policies, it is important to have the support and participation of citizens. The transition not only concerns climate change specifically, but it also needs to incorporate better jobs, health benefits, etc. Rogier Vandenberg, CEO of World Resources Institute, stressed that COVID-19 revealed that citizens are eager to have greener and more walkable cities. Mr. Saura Martínez de Toda, provided examples of how Madrid has put citizen participation into practice. The city recently rolled out a call of 50 million Euros for a participatory budget. Together in collaboration with Climate-KIC, Madrid is uniting interest groups, including universities and organizations, to co-design sustainable solutions. The city

is also exploring the regulations on vehicle parking to encourage sustainable transit. Electric vehicles are now granted free parking in Madrid, which has stimulated the creation of several companies providing fleets.

Technological innovation:

Although there is no silver bullet when it comes to technological innovation, market-shaping policies have assisted in the development of climate technology, as emphasized by Jean-Francois Mercure, Director of the University of Exeter's EEIST project. With both policy and technological innovation, pilot studies are required to test the implementation and impact of these innovations. Although such studies are not always successful, we must be willing to accept the cost of failure to acquire a strong portfolio of options.



Session 5: Innovation in collaborations with businesses, social enterprises, and other civic institutions: reshaping value chains for regional jobs and skills

Description In this session, panelists highlighted cases of innovation in collaborations in a multi-stakeholder environment. Panelists agreed that in order to realize climate action agendas, stakeholders need to be involved from an early stage and share a common vision.

City of Edinburgh:

Adam McVey, Councilor and Council Leader, noted that due to the size of Edinburgh, the entire community can be put behind the 2030 Agenda. Within Scotland, Edinburgh was the first city to declare a climate emergency. The city has experienced many successes by bringing together concepts like an anti-poverty agenda and fair work alongside climate action. Air quality is addressed in the city by recognizing conflict and diversifying the economy, thereby moving away from heavy industry. Mr. McVey also commented that sharing insights between cities is necessary to facilitate learnings and strengthen practices. Edinburgh has worked with Copenhagen in this capacity.

Deep Demonstration:

Maya Færch, from the Laudes Foundation, works in collaboration with EIT Climate-KIC on urban Deep Demonstration. In Madrid, this translates to a demand for better buildings. Ms. Færch also emphasized the need to amplify frontrunner cities, while collaborating with other cities to foster learning. With collaboration, cities build on what is already there, rather than starting from scratch. Katrien Rycken, Executive Director of Leuven 2030, also underlined how the city of Leuven has exchanged ideas with Milan, Amsterdam, and Vienna through Deep Demonstration.

City of Rotterdam:

Arno Bonte, Vice Mayor, highlighted how the Rotterdam Climate Agreement has set out on an innovative plan of action for energy transition, which includes the participation of companies, organizations, and thousands of citizens. New wind farms, solar panels, and housing insulation were the main topics discussed in the establishment of the agreement. By implementing this agreement, the city will succeed in not only reducing carbon emissions but also in business and job creation. The most important outcome for the city is to share a common story as a society and to co-benefit other city issues.

City of Leuven:

Leuven 2030 was founded by the current mayor in 2013 and 60 stakeholders, based on advice by universities. Ms. Rycken stressed that those who are serious about tackling this societal challenge should be sharing the vision and opportunities with all stakeholders, which takes political courage. Leuven collaborates with representatives from business, civil society organizations, local governments, and knowledge institutions. Through this collaboration, values are brought together, trust is built, mutual understanding is fostered, and structural accountability and responsibility are shared.



Session 6: Climate entrepreneurship ecosystems in African cities: Creating a supporting environment for transformational change

Description In this session, panelists examined the challenges and solutions facing climate entrepreneurship ecosystems in African cities. Although the region faces economic and climate-related challenges, enabling environments which connect stakeholders provide a pathway to strengthen development.

Challenges:

Panelists agreed that a challenge entrepreneurs face in Africa is a lack of funds and timely financing. Gracia Munganga, Chief Operating Officer of Sustain Solar, noted that this is partially due to a lack of trust in Africa, and more specifically the ability to assess if a real company is behind an initiative, along with the question of how to transfer funds in and out of the continent. Therefore, there is a need to increase transparency through hubs, incubators, and networks to provide investors with more security.

Climate change itself presents further challenges for the region. Sara Fakir, Co-Founder of ideiaLab, highlighted that Mozambique is one of the top 10 countries with a high-risk of climate change, and they are already being impacted by the effects. Dr. Sinead Walsh, Climate Director & Deputy Director General of Irish Aid and Africa, Ireland's Department of Foreign Affairs, summarized the situation by stating that "the playing field isn't level, let's not pretend it is."

Solutions:

Panelists stressed the need to establish an enabling environment for solutions, which drives credibility and further investment into the continent. Climate-KIC's Climate Launchpad strives to enable this environment, with approximately 45% of their ideas being generated from Africa. Ms. Fakir emphasized that through community participation with Climate-KIC's Climate Launchpad, solutions have been provided for Mozambique in the areas of transit and sanitation. Because the solutions are created through a bottom-up strategy utilizing citizen participation, much local support has been generated for them.

Further solutions entail connecting stakeholders, including enterprises and entrepreneurs, and ensuring that policymakers frame the climate transition as an innovation opportunity. When countries upgrade their energy policies, this triggers the market for local entrepreneurs to participate. Mr. Emtairah highlighted that there is strong support by the government to meet an ambitious renewable energy target in Morocco. The solutions specified require assessing local contexts. In Morocco, for example, drone-powered technology is being used to monitor agriculture.





Session 7: NBSO GHG accounting and sub-nationals

Description In this session, panelists addressed current GHG accounting progress on the sub-national level, along with discussing limitations and their solution-based approaches. Replicating and building upon existing pilot studies provides a solid foundation for the further strengthening and development of GHG accounting practices.

Current work in sub-nationals:

In the Canadian province of British Columbia, regulatory GHG emissions targets have been implemented. This is especially relevant for the mining industry, which is building renewable infrastructure to facilitate the low-carbon transition. The province is currently working in collaboration with Open Earth to track supply chain GHGs. Nathaniel Amann-Blake, Assistant Deputy Minister of Video Mines Digital Trust, noted that what is highlighted in the case of British Columbia will be scaled and adopted by others for international coordination against climate change.

Professor Dr. Kim, from the University of Goyang, presented pilot projects for GHG standardization. One city from each continent has been asked to contribute, including Goyang. Blockchain facilitated software will be used to manage emissions data across many areas including shelter, nutrition, health, access, lifestyle, leisure and nature.

Limitations and solutions:

Catherine Atkin, Director of the Stanford Codex Climate Data Policy Initiative, stressed that without data, we are never going to create a market that properly incentivizes people. There will be early adopters, however, we also need the policy to support GHG reporting. Martin Wainstein also emphasized the need for data transparency, especially when it comes to climate. As the Canadian province of British Columbia has established, open-source and open standards provide a strong starting point for this. Anna Stanley, Manager of Climate Action at the World Business Council for Sustainable Development, stated that connecting different technological solutions, while collaborating between cities and standardizing emissions reporting is key to achieving net-zero emissions.



DAY#3 WEDNESDAY, 3 NOVEMBER 2021

Session 1: System change and climate innovation in the technology industry

Description

Climate change is a disruptive issue which requires disruptive solutions. Together with the session's moderator, Massamba Thiolye, Dr. Liangzhou Fang, Global VP and CMO, Huawei Digital Energy, engaged in a fireside chat which highlighted how cutting-edge digital technologies, including smart grids and e-mobility technologies, can drive transformative and solution-oriented change, thereby accelerating our global progress towards achieving carbon neutrality.

Building a low carbon smart society:

Carbon neutrality has gained global consensus. Low carbon technologies, electrification, and intelligence are key to filling the gap between what is needed in societies and what is currently possible. Digital technological innovation provides us with a base for this realization, as evident from cases highlighting improved efficiency in industry. The digitalization of the China Southern Power Grid, for example, has resulted in the grid becoming almost 80 times more efficient. Dr. Fang noted that with the use of AI technology, a plant can generate 20% more power than a traditional site. Improved efficiency following the implementation of AI technologies is also evident in photovoltaic (PV) power stations, where faults can be detected within 15 minutes using AI, whereas the detection process would take hours with on-site engineers. Furthermore, prefabricated AI data centers can be set up in six months, compared to the two years required for a traditional computing center. Overall, the electrification of power

consumption sites leads to cleaner power generation, thereby driving transformative climate action.

Huawei's commitment to clean energy:

Dr. Fang emphasized that Huawei positions itself as an enabler of emission reductions and avoidance through its innovative use of AI energy systems. Green power generation and the electrification of power consumption sites, including electric vehicles, are strategies to achieve low carbon smart societies. Today, only one percent of the total vehicles on our planet are electric. Huawei aims to speed up the realization of carbon neutrality by combining electronic technologies and digital technologies to improve the efficiency of traditional energy systems. By 30 September 2021, Huawei has helped to generate 443.5 billion kWh, and through improved efficiency has saved 16.6 billion kWh - the equivalent CO₂ savings of planting 290 million trees. Dr. Fang highlights that Huawei will provide charging points for electric vehicles in the future.

Session 2: Subnational and city governments - City/province/country champions

Description

This session featured presentations from subnational and city government leaders representing 7 countries. While showcasing some of their successful projects, the leaders echoed their support to the UN Climate Change Global Innovation Hub (UGIH) and their plans for sustainable development in their regions.

Emissions reduction & UGIH:

As underlined by Kirsten Dunlop, CEO of Climate-KIC, UGIH offers and encourages a space for radical innovation, shifting from hundreds of individual solutions to long-term systematic change, driven by needs. Emissions reduction, with the goal of net-zero, is central to this systematic change, as agreed upon by all panelists and is evident by the emission reduction agendas presented. South Australia's Minister of Environment stated that by 2030, 100% of the net energy generated will come from wind and solar energy. The Glasgow Green Deal sets out on a mission to ensure that all residents will be able to live equitably and sustainably in a net-zero city by 2030.

The leaders all highlighted the progress which has been made towards achieving net-zero emissions. Susan Aitken, Leader of City Council in Glasgow, noted that the city has reduced carbon emissions by 41% in the last decade, an action largely led by Glasgow's City Council on its own. The city of Surrey, British Columbia has established a biofuel facility, which is the first closed loop facility of its kind in North America, converting food and garden waste into compost and renewable natural gas. South Australia is also undergoing transitions in their agricultural economy, with seaweed being fed to livestock to reduce methane production. Green transport is another area where all panelists highlighted innovative progress. From government subsidized electric vehicle charging networks,

to the expansion of bicycle lane networks to reducing the number of vehicles on the road, the implementation of such sustainable (public) transit solutions is key for cities to achieve their net-zero emissions goals. Furthermore, the banning of single-use plastics, reconvert and repurposing aged industrial buildings to housing and innovation hubs and reducing landfill waste with sophisticated composting technology all demonstrate the commitment the represented municipalities, cities, and provinces have made towards strengthening circular economies.

Citizen participation:

Citizen participation is essential to ensuring a green transition leaves no one behind, as well as building trust and incentivizing behavioral change. As Aitken noted, Glasgow's transition to a postindustrial city left many behind, which is why the green transition must be done with the people and for the people. In other

words, the transition should not be a top-down imposed restructuring of people's lives, but rather a participatory natural transition. Oswaldo Lucon, Climate Change Advisor for the Government of Sao Paulo, also emphasized the importance of acknowledging and incorporating traditional and indigenous knowledge into participatory processes.

Collaboration between sub-national and city governments:

Aitken expressed that, as a city, we do not pretend to have all the answers and the solutions, however, all cities need to work together in this transition and share innovations equitably. Many sub-national and city governments rely on benchmarking to measure their progress. As Mayor Lee Jae Joon highlighted, such tracking and managing is only possible with available data. The sharing of such data serves to build trust in partnerships towards a common goal.





Session 3: Digital Innovation Hub for Climate Change

Description This session highlighted the intersection between the digital and green transformation, sharing best practices on the transformational role of digital innovations for climate action. The panelists also reflected on the establishment and role of the UNFCCC Innovation Hub. Opening remarks were delivered by Ovais Sarmad, Deputy Executive Secretary, UNFCCC.

Digitalization and sustainable development:

Tania Vorwerk (Dep. DG for Private Sector, Trade, Employment and Digital Technologies BMZ), Cecilia Sharp (Assistant Director General, Department for International Organisations and Policy Support, SIDA) and Carla Montesi (Director for Green Deal and Digital Agenda, DG INTPA European Commission) underlined the need to harness digitalization opportunities for sustainable development i.e. to create added social value and to keep the environmental footprint as minimal as possible. Further, they announced that green digital solutions will be mainstreamed into the new programmes of international cooperation. They also highlighted examples of programmes and activities dedicated to addressing this double challenge. Lacina Koné (Executive Director, Smart Africa) stressed the need for data provision for Africa to make full, sustainable, and equitable use of its resources. Nouridine Bihmane (CEO Growing Markets Region & Decarbonization Business Line, ATOS) underlined the readiness of enterprises to make the transition happen. The ICT sector needs

to become greener, better use renewable energy and become more energy efficient, either through leaner programming, or more distributed data computing. He strongly emphasized opportunities for new markets, jobs and professions. Today there is a huge lack of engineers that are knowledgeable in climate matters and ICT, as well as a lack of climate experts that know ICT.

Digital for Development Hub:

Carla Montesi announced the new EC-flagship activity Digital for Development Hub (D4D), which will function as a platform to convene and exchange best practices, including regional hubs in LAC, Africa, and Asia. Under this roof, a dedicated working group on Green Digital will be initiated to support partner countries. Lacina Koné called for a new way of thinking “like a startup” to be agile enough to encounter the complex realities. Tania Vorwerk was encouraged to closely link the activities of the D4D Hub with the work of the European Green Digital Coalition that will develop methods to measure the net environmental

impact of ICT solutions. Cecilia Sharp then spoke about SIDA’s second-generation challenge funds that aim at overcoming the systemic lack of capital in many developing markets by financing entrepreneurs that are strongly committed to driving sustainable development and enhancing innovation.

Digital for Climate Innovation Challenge:

The vision of the UNFCCC Innovation Hub is to enable moonshot thinking. Massamba Thioye says that often, we only ask what is possible and not what is needed. The role of innovation is to address the gap that exists between what is perceived as possible and what is needed. The UNFCCC Innovation Hub wants to promote ambitious climate targets. The Digital for Climate Innovation Challenge engages with cities to understand what their demands for climate solutions are. The goal is to identify solutions that address the demands cities have. The Digital for Climate Innovation Challenge allows and supports the implementation of the most innovative solutions



to address the challenges of climate change. The Digital for Climate Innovation Challenge promotes an open approach between tech organizations, civil society actors and government, citizens, and community-based organizations. Carla Montesi believes that this initiative does not only support the innovation approach, but also the demand-driven approach from cities and local governments.

The role of private actors:

Frank Barz (Program Director, TechBoost, Deutsche Telekom) noted that Deutsche Telekom lives up to its responsibility to act towards climate change by facilitating access to climate action. Alicia Lenze (Director of Sustainability, SAP) added that SAP invests heavily in products that allow other companies to manage their carbon footprint by providing tools for holistic sustainability performance management and enabling transitions to more circular business processes. Innovation and a fruitful ecosystem of partners are central for success; therefore, it is important for SAP to work closely with start-ups. It is crucial to drive this conversation forward, to shift from commitments to concrete action to allow for true innovation which benefits our cities, and our environment.

The role of cities and urban spaces:

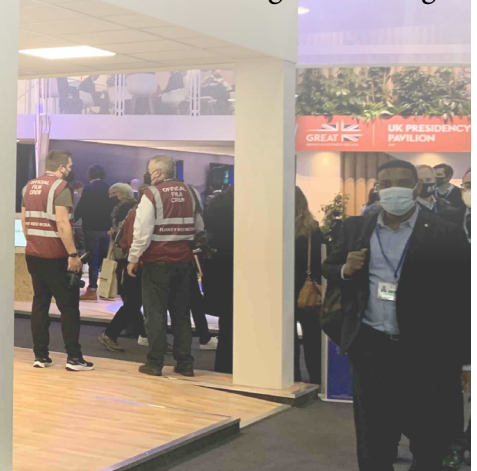
Ovais Sarmad (Deputy Executive Secretary, UNFCCC) noted that city governments are at the frontline when it comes to climate change action, using their platforms to engage with their citizens as climate actors. Cities are unique in the position

they hold, facilitating emission avoidance through consumer behavior and reducing emissions related to the infrastructure they build and maintain. Cities are expected to reinvent, secure, and stimulate climate action up, down and across the various sectors of city administration. The city of the future is still to be invented; it is expected to be regenerative rather than destructive. Such futuristic cities are not a fantasy, they are already happening in some parts of the world – the goal is to spread these approaches to all over the world. The focus of the first challenge of the UNFCCC is therefore relevant. The UNFCCC Innovation Hub Challenge will initiate a process of radical change in the development and implementation of digital solutions.

Tania Vorwerk added that the ability to reach the Paris Agreement goals relies on many factors but mostly on what is happening in cities. More than half of the world's population lives in cities and most of the future population growth will be in urban areas. Cities are responsible for 70% of global emissions. Cities are both causes and victims of climate change and hence have different reasons on why to address it. Building climate-smart cities involves developing a vast range of measures depending on the local needs. Digital transformation offers powerful solutions to create livable, resilient, and smart cities. The technological revolution requires local stakeholders to work together locally and globally to develop, test, and scale successful approaches. How can digital solutions contribute to having more sustainable climate-smart cities at scale? Many powerful solutions already exist in partnering countries, therefore we need stronger knowledge-sharing platforms and more meaningful exchanges.



United Nations
Climate Change
Pavilion





Session 4: Role of Stock Exchange in Promoting Innovative Climate Solutions: Financing, Standards and Education

Description This session explored how stakeholders can work with stock exchanges to enhance sustainability and enable a just transition to carbon neutral economies. Innovative solutions in the areas of financing, standards, and education were explored by a panel of expert stock exchange representatives.

Transparency:

Panelists stressed the importance of transparency and the establishment of clear disclosure standards to assist stakeholders in assessing and comparing the sustainability of prospective investments. Herry Cho, Head of Sustainability and Sustainable Finance for the Singapore Exchange, explained that the Task Force of Climate-related Financial Disclosures (TCFD) has been made mandatory in the Singaporean market. David Harris, Global Head of Sustainability Finance, Data, and Analytics with the London Stock Exchange Group, highlighted that such measures to standardize and increase the reporting on climate-related financial information have been implemented in select settings; data disclosure remains a barrier in exchanges. Policymakers, therefore, need to work together on single global standards and strive for continuous improvement. Exchanges also need to play a leading role by collaborating to drive, enhance, strengthen, and uphold reporting standards.

The role of environmental, social, and corporate governance (ESG):

Can there be a balance between environmental, social

and corporate governance? Shameela Soobramoney, Chief Sustainability Officer of the Johannesburg Stock Exchange, argued that this is not an either-or question. Good governance cannot be achieved without consideration of the environment and society. When examining ESG strategies, it must be taken into account that all economies face different challenges and encompass unique social contexts. Soobramoney highlighted how South Africa faces high levels of societal inequalities, having one of the highest Gini coefficients in the world. Therefore, markets often have different starting points and diverse developmental trajectories. Listing companies with ESG-related products in exchanges enables investors to decarbonize their investments and shift allocations based on transition strategies. Hideki Tomita, Chief Representative in Europe of the Japan Exchange Group (JPX), noted that 3000 companies listed on the exchange already provide such products. JPX itself has also committed to an ambitious plan to reach carbon neutrality by 2024. The plan includes making the shift to sustainable electricity in their Tokyo headquarters, along with all IT facilities and data centers.

Session 5: Innovative financial solutions for need-based/ solution-oriented approach to climate action

Description A panel composed of banking and financial experts explored the innovative financial solutions required to establish a solution-oriented approach to climate action. This session highlighted that although the Global South faces barriers when it comes to a just transition, blended financial approaches, fiscal policies, and political action can provide us with the tools needed to reshape our global economy for the better.



Barriers to a just transition:

Panelists agreed that disparities between the Global North and Global South are presently hindering a just transition to clean energy. Vivienne Yeda, the Director-General of the East Africa Development Bank, noted that although 80% of emissions come from G20 countries, the Global South is asked to abandon its natural resource sector, which includes coal, oil, and gas. In much of the Global South, these natural resources are the only profitable sector in economies that are often indebted. Abandoning this sector would therefore further exasperate inequalities between the Global North and Global South, a sacrifice which Yeda argued is not properly quantified. Kampeta Sayinzoga, CEO for the Development Bank of Rwanda, explained how the Global South faces the challenge of higher interest rates for green bonds than the Global

North, with the Global North setting the minimum requirements which may not fit local circumstances.

Solutions for a just transition:

As a solution to the disparities between the Global North and Global South, Yeda suggested implementing a fiscal policy to tax the historical emissions of the Global North and utilize the funds to support the Global South. Antoine Sire, Global Head of Company Engagement for BNP Paribas, emphasized that new policies are required to counter such disparities and political debate cannot be avoided. Although the political signal has been given for an energy transition, a just transition has yet to be realized. Panelists also proposed a blended financial approach as a part of the toolbox to mobilize financing for transformative change.

Session 6: How do we accelerate climate action? Digital innovation collaboration and the path to net zero

Description In this session, panelists explored the key challenges and solutions to driving sustainability and achieving the path to net-zero emissions. Although it is clear that progress needs to be accelerated, AI and machine learning technology offer innovative solutions.

Challenges to driving sustainability:

Despite the information and communications technology (ICT) sector being one of the fastest-growing carbon-emitting sectors, limited progress has been made in this sector to achieve decarbonization. Dennis Pamlin, Head at Mission Innovation's Net-Zero Compatibility Innovations Initiative and Senior Advisor at RISE argued that the challenge is to move from a climate change risk agenda, to how sectors can profit from aligning with the Paris Agreement. Tim Fleming, Director of Global Enterprise Sustainability at AT&T expressed similar concerns, noting that our biggest barrier is time itself. Progress is not being made quickly enough and a lack of transparency is evident.

Solutions to driving sustainability:

Panelists agreed that AI and machine learning technologies can be galvanized to provide innovative solutions for measuring, reporting and assessment. Florence Verzellen, Executive Vice President of Industry, Marketing & Sustainability at Dassault Systems, noted that virtual twins provide one solution for reducing our carbon footprint. Virtual twins entail creating virtual representations of real-world products, which can then be created physically. By virtually creating many products a company can assess the sustainability of the products, including life cycle and carbon footprint assessment, prior to them entering physical production lines.

While technologies such as AI can be utilized to collect better data, Parul Gupta, Partner in Strategic Initiatives at Arabesque, noted that trust in measuring and reporting data is essential. Panelists agreed that multistakeholder collaboration is key to ensuring transparency and fostering the realization of the Paris Agreement targets. Environmental, social, and corporate governance reporting must therefore include how companies themselves can be the drivers of change, as opposed to focusing only on risk reduction.



DAY#4 THURSDAY, 4 NOVEMBER 2021

Session 1: How to develop innovation platforms that are effective in facilitating the development and implementation of climate and sustainability solutions?

Description The UGIH platform has two fundamental parts: the physical hub that convince people on site around the world to drive collaborative innovation, and the virtual hub, which is the most powerful digital platform to achieve innovation on a global level to address our massive climate challenge and also talk about our core human needs. In this session, different panels will be introduced, regarding their projects and initiatives.

Peter Oksen

Senior Programme Officer of WIPO Green

introduced the ideas and initiatives of WIPO Green, which is based on the global challenge division. They believe that the World is facing extremely serious environmental, social and economic challenges, which are all interrelated. There are thousands of technologies and solutions to be mobilized and pulled together in the right direction. However, the uptake of green technology is too low due to a lack of information, available solutions, and feasibility. Moreover, the Intellectual Property Rights system generates technological knowledge and facilitates innovation and technology transfer. WIPO Green works as a platform to respond to tangible needs, mobilizing technological knowledge to provide solutions. From 2013, WIPO Green started being regarded as an information centre-point to provide innovation and green technology. Beyond that, as an integrated platform, it also combines all assets such as databases, projects, partners and resources (knowledge materials), which can be simply searched and directly used.

Michal Nachmany

Founder and CEO at Climate Policy Radar

emphasised the significance of policy and addressed the gap in knowledge about policy options as well as the inefficient approaches to data collection and analysis. Therefore, Climate Policy Radar radically scales up the

collection and analysis of 1,500 climate laws and policies in English at the beginning. The coming translations help by equipping decision-makers with rich, high quality, insight-enabling data on the climate policy landscape, to support evidence-based policymaking and investment to drive the transition to a low carbon, resilient world. Climate is just the beginning; searching biodiversity, health, social, and economic policy is also possible and there is the potential to see the linkage between these policies and climate policy.

Ms. Nanqing Jiang

President of Green Inclusive China

introduced the carbon reduction digital platform, Green Inclusive Cloud, aiming to solve problems existing in consumption patterns to reduce emissions by covering social scenarios with individual-based behaviours, using digitalized technology to make emissions measurable and standardising the methodologies to make emissions reductions tradable. It is a new 2C protocol that integrated common standards focused on the consumption patterns and it is available and convenient for individuals to check personal carbon emissions reductions and trade through their smartphones. Besides, it could generate a digital carbon account book for enterprises and governments worldwide, which is making a closed loop of sustainable inclusive offset mechanisms. Particularly, at the enterprise-output level, green behaviour can be practised



through generating a corporate digital carbon account book. Furthermore, at the city level outputs, carbon-neutral solutions for the city have been applied to the Winter Olympic Committee, Luzhou City and Suzhou City in China.

Michael Pittelkow
GM of SAP

states that global businesses including for-profit businesses must stand up and take a leading role in solving sustainable climate challenges and creating a network of partners. SAP believes that climate change has to be addressed in multiple ways, in which collaboration, crossing boundaries, and sharing are make-or-break. It leads to a climate innovation marketplace that is linking demand to solutions, innovations, innovators, and enablers along the innovation and transformation process. This has benefits including speed and agility, cost efficiency, intelligence, compliance and result orientation.

Catherine Atkin
Director of Stanford Codex Climate Data Policy Initiative

Director of Stanford Codex Climate Data Policy Initiative, emphasised the necessity of collaboration and needs-based solutions in alliance with activities at all levels. It is recognised that the technology platform side is taking powerful action, and the UGIH, as the platform of platforms, efficiently points out the human needs, driving technology innovation for climate change.



Session 2: Presenting the UGIH Platform

Description

In this session, the core partners from Mission Innovation, Amazon Web Services, and Open Earth Foundation introduced the UGIH Platform highlighting its key features and unique value addition. The UN Climate Change Global Innovation Hub will exist as a convening ground to foster collaboration and greater efficiency in fighting climate change. It is a network of networks, platform of platforms and marketplace of global marketplaces. The Hub will incorporate an extensive, detailed, and end-user-focused virtual platform for radical collaboration, communication, and coordination of climate solutions. The team aims to develop a functional digital platform by COP27.

Dennis Pamlin, Mission Innovation/RISE:

Pamlin spoke about the nature of the UN Climate Change Global Innovation Hub as more than just a matchmaking of climate actors. The hub will be a dynamic approach between supply and demand with a key role for the enablers (those who help us rethink), new business models, and marketing of new approaches to addressing human needs. Pamlin further noted that the available green solutions are resource intensive, expensive, and tend to exclude parts of the global population from access. The UN Climate Change Global Innovation Hub serves as a platform to rethink our approach to climate solutions, making them more accessible, more comprehensive, and sustainable in the long-term. Pamlin stressed the need to use innovative technologies to create dynamic and thorough global solutions, recognizing that climate solutions are not 'one-size-fits-all.'

Caitlin Herren, Director of Social Responsibility and Sustainability Solutions, Amazon Web Services:

Herren explained that from within the private sector, the best way to achieve the 1.5C Goal is through enablement for all partners. She went on to discuss the power of collective action, with respect to the work being done at Amazon Web Services. In 2019, Amazon

co-founded the Climate Pledge, pledging to reach net zero carbon by 2040 or sooner. Since then, Amazon has recruited 200+ companies around the world onto the Climate Pledge. Collectively, these companies are expected to mitigate 1.98bn metric tons of carbon on a 2020 baseline (5.45% of global emissions today).

Martin Wainstein, Executive Director, Open Earth Foundation:

Wainstein began by explaining that the United Nations Global Innovation Hub is not a replacement for other initiatives, but rather a convening ground to foster collaboration and greater efficiency in fighting climate change. The platform integrates expertise across industries, draws ideas and innovation from all corners; it fosters a collaborative online space unlike anything else offered, all while harnessing the power, resources, and relationships of the UN. In a year, the team will be leveraging technology to reduce friction in the use of this platform; fostering radical collaboration to encourage progression toward the SDGs. Wainstein went on to explain the plan for developing the initiative. By COP27, the first proof of concept with existing users in the virtual platform will be launched; by COP28, the digital platform will be something 'fully mature' that can host a scalable number of users.



Session 3: Incubators in a 21st century innovation ecosystem delivering 1.5 solutions

Description In this session, Dennis Pamlin, Mission Innovation/RISE; Smita Rakesh, Project Manager, India Incubator; Catharina Sandberg, CEO, LEAD; Sebastian Diaz, Co-Founder, DEEP Ecosystem EU Incubator; Sylvia Stojilkovic, Managing Partner, TechFounders; and Simon Bennett, Energy Technology Analyst, IEA speak about how incubators as eco-system builders should be at the forefront of climate innovation, and the assessment of these innovations to fit the 1.5-degree framework.

Avoided Emission and the PICU Model:

Dennis Pamlin argues that it is time to move away from divesting and improving existing sectors and rather move towards investing in need-based solutions in a quest for global sustainable solutions that focus on avoided emissions rather than only focusing on reduced emissions. It is important to realize how incubators can make a potentially positive impact on sustainability through start-ups. Catharina Sandberg says that one way of achieving this real impact is through a PICU model. The PICU model is a 4-step process. Identify and accelerate Potential; refine, develop and accelerate Ideas; encourage and accelerate Clustering; and support and accelerate Uptake. This process focuses on start-ups and corporates. The PICU Model has the potential to increase 14 million tons of potential avoided emissions from four start-ups in Sweden under the Avoided Emissions Framework to 25 million tons with the PICU Model.

Thinking beyond carbon emissions and regular structures:

We must get rid of the idea that sustainable solutions are limited to dealing with carbon emissions and understand that it also includes adaptation, changes in livelihoods, gender, equity, inclusion, and access to energy. Smita Rakesh additionally says that the way for incubators to reach this holistic idea of sustainable solutions is by building a network of incubators to share knowledge and data, designing APIs and developing toolkits. This should then be coupled

with identifying start-ups or companies that can have an impact on the climate at an early stage and help them make a sustainable impact on the climate. Sebastian Diaz believes incubators should have an expanded meaning of being eco-system builders and entrepreneurs should be understood as being capable of changing eco-systems. Eco-system builders need to work on both top-down and bottom-up approaches. They must develop rules and frameworks to create a clear playing field for entrepreneurs to adhere, thrive and have a positive impact on the climate.

Deep-tech innovation:

Sylvia Stojilkovic noted that through deep-tech innovations, it is possible to accelerate and incubate start-ups that challenge the industry status quo. To achieve Net Zero Emissions, collaboration is key. It is important to bring together combined capabilities and build an eco-system of real open innovation. People do not know about deep tech and cannot articulate it within our conversations surrounding technology, but it is time to actively discuss it.

Incubators in the context of governance:

Simon Bennett believes there need to be more dynamic, active, and competitive technologies working on cheaper, effective, and lower emission energy service delivery and acceleration of the deployment process of green energy. The market opportunity for green energy solutions such as solar and wind are often underestimated when real-time statistics show that it is a 1.2 trillion-dollar market opportunity that is



equivalent to traditional energy solutions such as oil and coal. Incubators must help governments in their process of choosing and prioritizing which technologies they must develop and target. In addition to that, governments also need to figure out how to funnel support through funding, networking, incubation and providing infrastructure.

Session 4: Assessing avoided emissions and 1.5C compatibility of solution providers and enablers

Description This session featured panelists who help stakeholders to assess avoided emissions and 1.5C capability, helping them access markets to scale up innovative solutions

Dennis Pamlin

Mission Innovation/RISE:

We are focusing on human needs, not reducing emissions of the biggest polluters. So, this session is about how can we assess whether innovations are providing a product or a need, and are they incremental or disruptive? One of the pathways to 1.5 degrees is without CCS, showing the technology is here today. However, most investors are still living in the Kyoto times, which means selecting the least bad emitters and including them in the concerned fund. We need to go towards avoided emissions, not just reduced emissions. This opens up a new generation of solutions providers. Hopefully, by the next COP, the focus will move from just the amount of money being pledged, to how this relates to an amount of carbon avoided, giving a sense of tangible action, and preventing greenwashing.

Sarah Kearney

Executive Director, Crane, and Prime Coalition:

Prime partners with philanthropists and investors to support market-driven solutions, focusing on bringing value and impact. Sarah describes overlooked innovations and people as missed opportunities. Engaging and benefiting from such opportunities is to benefit from additionality. Prime accesses and promotes these ideas through catalytic capital which can absorb longer time horizons, lower returns or disproportionate risk that finance-first investors cannot take on. The Crane tool is used to identify such

projects and support other investors in the assessment and reporting of emissions through assessing future impacts. But one company cannot do this on their own; the Prime Project Frame is dedicated to creating a large partnership of investors to accelerate positive impact.

Bram van der Grinten

CEO, Impact Forecast:

Impact Forecast makes impact data and expertise available to anyone through an online tool and workshops. Companies currently must ask third parties for Life Cycle Analysis, making it prohibitively expensive. In Impact Forecast's model, impact data is directly accessible and can be shared through an impact report to investors and clients. Bram finished by emphasizing Peter Drucker's quote: "If you can't measure it, you can't improve it".

Gabriela Herculano

CEO, iClima:

iClima looks for products and services that preclude emissions from ever taking place. Gabriela explains how iClima uses hard data of green revenue and potential avoided emissions instead of ESG scorecards and carbon footprint reductions to do this. The time value of carbon is an important factor in this too, as avoidance of emissions in the future is worth less than avoidance now. iClima uses all this data to identify the most impactful solutions in terms of contribution to the path to cutting emissions in half by 2030. Gabriela ends with a similar quote to Bram:



“what gets measured gets managed”, emphasizing the importance of data in impactful investing.

Roberta Benedetti

Independent Consultant, JustClimate:

JustClimate is an investment business that focuses on climate-led investing, which, according to Roberta is investing to catalyze timely climate impact at scale. Roberta also focuses on the time value of carbon, taking technologically proven solutions that need to be deployed at a pace to avoid emissions. Similar to iClima, JustClimate looks for solutions that can have the largest impact. They do so with a focus on harder to abate sectors that need flexible capital

which often fall through the gaps of investors and VC.

Luis Neves

CEO, GeSI and founder Digital with Purpose:

Digital technologies are a key driver in reducing carbon emissions. GeSI is working on enabling the capacity of technologies to tackle all facets of sustainability, not just carbon emissions. The Digital with Purpose movement is a tool for companies to wield a response to sustainability through redefining their purpose to sustainability as a responsible business, with the help of digitally enabled solutions. The movement is open to all companies, but no greenwashing is tolerated.

Session 5: Accelerating uptake of the next generation of climate solutions: opportunities in the 4th industrial revolution

Description During this session, panelists discussed the key contributions in accelerated deployment of the new generation climate solutions. Although innovation trends are focused on technological advancements, all panelists agreed that integration is required.

Significance of cooperation:

The importance of cooperation between different entities was emphasized during this session. Xavier Troussard, Head of the New European Bauhaus Unit, stated that the rationale behind the Bauhaus is the importance of inclusion of citizens and cultural dimension in addition to technological and economic dimensions to achieve sustainable transformation in the daily lives of citizens, communities, products, and ecosystems. Anthony Holey, representing Mission Possible Partnership and World Economic Forum, highlighted that while it took decades for technological advancements to mature in some sectors, there might not be enough time for other sectors to mature before 2050 if the same rate is applied. As a result, the Mission Possible Partnership was created to establish a choreography amongst leaders in decarbonization, climate finance, and policymaking to trigger emission reduction in carbon-intensive industries by creating milestones and pathways to achieve net-zero by mid-century. Ganesh Das, representing Tata Power-DDL and Clean Energy International Incubation Centre, stated that Industrial collaboration is important to create symbiotic relationships and cross benefits between supply chains since all industries consume electricity, establishing sustainability on one segment of the supply chain accelerates it on other sides.

Innovation integration:

All speakers noted that different aspects of innovation are required to overcome climate change. Charlie Wilson, a professor at Tyndall Center for Climate Change Research, emphasized that innovation trends



need to be directed towards consumption instead of the production side. Research on Low Energy Demand (LED) future showed that global energy demand could be reduced by at least 50% by 2050 while meeting the 1.5 degrees targets in a way that outperforms supply-side pathways in the context of SDGs under three meta strategies: electrification, digitalization, and decentralization. Such research, aligning with the UGIH, focused on providing better quality services to more people while being resource-efficient and it included mobility modes, trade and exchange, adaptive learning, and digital services.

Marco Duso, representing BCG Green Ventures, stated that BCG now perceives climate risks as climate opportunities, which create demand to drive innovation while highlighting that current approaches to climate actions are limited by their focus on incremental improvements in the supply side in a deterministic way. Also, Mr. Duso emphasized that climate solutions and values are directly correlated to one another, which accelerates the implementation of sustainable solutions that include different sectors. Riyong Kim, representing EEA, highlighted the importance of different aspects of innovation to combat climate change and loss of biodiversity as outlooks to 2030 are unpromising. Ms. Kim emphasized the priorities of the EEA including protection and restoration of nature and biodiversity, supporting policy implementation, providing timely input to solutions, building strong networks, exploiting data and technologies, and benefits of healthy ecosystems. Ms. Kim also underlined how our behaviour changed with the COVID-19 pandemic and how this magnifies the importance of shifting our consumption behavior to reduce pressures on our nature. Mr. Das noted that while academia and research play key roles in technological innovation, policies are necessary because they make technologies more cost-effective and accelerate commercialization, which makes dynamic innovation an important pillar.

Session 6: Scaling up digital innovations for climate action

Description “Twin-transition” paths, which refer to the green transition and digital transition, are integrating into one. Digital innovation focus on clean technologies which have transformed our society and our economy. The green and digital transformation goes beyond just technological change. It is estimated that the potential of the ICT sector is to reduce 10 times more greenhouse gas emissions. This session discusses practical approaches from different perspectives.

Mark Williams

Practice Manager of Global Knowledge and Expertise at the World Bank, stated the linkage between digital and green, which is a complex picture. The trend is happening in society but it also creates an opportunity for technology and business as well as for governments to be competitive in the climate challenge. Two general features of digital are the depth and breadth of its scale that can create the platform and opportunities to drive innovation in climate change.

David Jensen

Director of UNEP Digital Transformation Task Force, stated that the problem of the focus on technology is the exclusion of eco-consideration to the underlying

business model and the human relationships that underpin technology. He also emphasised the idea of trust-building, within the team, with partners, and users. Moreover, he highlighted the ability of such technologies in measuring behavioural changes.

Esther Kunda

Director General of Rwanda Ministry of ICT and Innovation, said that in the context of Africa, they need to build a smart city agenda, with climate change and action taken into account, to find sustainable solutions. Some of the activities that they are trying to implement are mostly around transportation, management and other different areas. Among them, key areas to understand are “what is the actual problem”, “what



is the digital innovation” and “how can we promote”.

Daniel Schmidt

Chief Sustainability Officer of SAP, noted that sustainability as an innovation driver and digital as a trigger can construct the business model that will solve the climate challenge. A sustainable company is a company that is transparent and accountable to emissions across the entire value chain. He also identified three ways for technology to bring down greenhouse gas emissions, which are: providing inside data transparency, driving the policy that increases expectation and encourages states to adopt transparent actions and accountability across the entire production chain.

Mariana de la Roche

Programme Manager of IOTA Foundation and Co-Chair, Social Impact Working Group, illustrated that with technologies the overall supply chains do improve,

however, the data used for measuring is limited to certain aspects of the blockchains, for example, material production. She also addresses that project developers take into account the United Nations Development Programme Sustainable Development Goals at all stages of project development, and there is a lack of a standardized framework for measuring the impact of these projects. She also noted, “Over 44% of these projects were working on climate action-related topics.”

Bernhard Kowatsch

Head of Innovation Accelerator, UN-World Food Programme, gave three examples of the scaling of digital innovations to show us how technologies help us, and especially the most vulnerable people. First are low tech-growing plants with soil; second is PLUS, a user-friendly planning tool to optimize school feeding menus; third is using satellite imagery and artificial intelligence for flood monitoring warning systems.

Session 7: Standards and our 2050 World

Description

This session featured the launch of Standards and our2050.world Initiative. The core themes of this panel were developing standards for greater efficiency, mobilizing state actors, creating clarity and consistency that allows for an acceleration of climate action, and focusing on supporting solution-oriented initiatives. The session also featured remarks from Nadita Ramachala, Manager, Standardization Division, Trinidad and Tobago Bureau of Standards; Zacharia Lukorito, Chief Manager, Kenya Bureau of Standards, and Chantal Guay, Chief Executive Officer, Standards Council of Canada who introduced their work, and engagement in the initiative.

Harnessing the power of standards: Scott Steedman, Vice-President (Policy) of the International Organization for Standardization, Director-General Standards at British Standards Institution, first discussed what ISO is, summing it up as a convening community through which good practices that protect consumers and the environment operate. They work to sustain and support the acceleration of non-state actors to deliver their net-zero aspirations, as well as to support governments to achieve national goals. ISO is a bridge between non-state actors, consumers, the public, indigenous peoples most affected by climate change, and governments.

Our 2050 World: Daniel Barlow, Head of Innovation Policy, British Standards Institution, introduced the new Standards and our2050.worlds Initiative. The initiative provides a means for collaboration through which stakeholders can connect and achieve greater efficiency in the race to net zero by 2050. There is a large focus on mobilizing nonstate actors around the world, as well as embedding the best climate science into international standards and amplifying the voices of those most affected by climate change. The 2050 world takes a three-pronged approach: improve guidance and map to existing standards; streamlining standards to accelerate change; and finally, bringing together non-state actors, organizations, and international bodies to enact greater effects on the larger global system. The overall goal is to convene key players to ensure that standards and regulation are systematically used to drive progress.



DAY#5 FRIDAY, 5 NOVEMBER 2021

Session 1: Innovation at the UN for 10 billion people

Description This session featured presentations from UNEP's International Methane Emissions Observatory (IMEO) and UN-Habitat's current flagship programmes on cities. The presentations showcased the importance of methane reduction and data standardization, along with highlighting programmes designed to connect cities and strengthen their transition into innovative and smart urban landscapes.

Methane reduction:

The main sectors responsible for methane production are energy (specifically oil and gas), livestock, and waste. Within the energy sector, oil and gas have the largest potential for methane reduction. Furthermore, at G20 methane reduction was recognized as one of the quickest and most cost-efficient strategies to tackle climate change. Methane reduction is, however, not a substitute for decarbonization, but the two rather go hand in hand.

Methane emissions data:

A lack of data and awareness concerning methane emissions has equated to limited societal engagement with this issue. Emissions are largely estimated, not measured. Estimations that have been produced are believed to have underrepresented actual emissions by up to 25 times. This clearly emphasizes the need for improved standardized reporting to build trust and accelerate action, as one cannot manage what one cannot measure. IMEO provides this missing dataset by integrating data from scientific studies, satellite data, and the Oil and Gas Methane Partnership of

companies covering 30% of oil and gas production.

Smarter cities:

Cities are centers of innovation and governance, which are fundamental to sustainable development, and therefore must be key actors in reducing greenhouse gas emissions. Innovation, however, is not purely technological but also shaped by society, culture, and institutions. 90% of the technology is in place to reduce emissions by 40% by 2030, however, amplified social and governance innovation is required to facilitate this.

UN-Habitat offers solution-oriented programmes, agendas, and conferences which connect cities to facilitate the acceleration and development of smart cities. While the New Urban Agenda outlines a strategic plan for innovation, the UN Innovation Technology Accelerator for Cities offers an entry point for sustainable urban development. The Innovate4Cities conference showcases innovative practices and solutions, aimed at strengthening community voices to advance science and practice together. Furthermore, the Climate Smart Cities Challenge matches problems with innovative solutions across cities.



Session 2: Key R&D needs for the energy transition - The role of innovation in critical sectors from sustainable electricity generation and long-duration storage to decarbonizing heavy industry

Description According to the International Energy Agency (IEA), about half of the technologies needed to reach net zero by 2050 are still in early technology readiness levels (TRLs). In order to address the adverse effects of climate change and contribute to sustainable economic development, new technological innovations are urgently needed. The UNIDO Investment and Technology Promotion Office (ITPO) Germany and Future Cleantech Architects (FCA), a climate innovation think tank from Germany, have teamed up to promote private sector innovation in cleantech and present some of the most relevant findings in this side event.

The event presented key take-aways of the [UNIDO Global Call for Innovative Solutions in Cleantech and Sustainable land Management](#), jointly organized by UNIDO and FCA, together with UNFCCC and UNCCD. Highlighting FCA's work during the past two years, FCA founder and CEO Dr. Peter Schniering and Deputy Head of UNIDO ITPO Germany, Vanessa Voelkel, summarized those areas in research and development that need to be accelerated immediately in order to close the innovation gaps in climate technology. Beginning with an overview of the most challenging sectors that will need to be decarbonized, the presentation discussed technologies such as less-intermittent renewables or hydrogen storage as well as new industrial processes such as innovations in cement production or maritime or aviation fuels while placing a particular emphasis on the scalability of solutions that are still in early development stages. The event was rounded off by UNIDO's Department of Energy Director, Tareq Emtairah, who introduced UNIDO's Global Cleantech Innovation Programme, a new cleantech ecosystem and accelerator approach designed to nurture innovators and entrepreneurs in order to promote and foster.





Session 3: UN SDG Action Campaign

Description

Hosted by the UN SDG and moderated by Hannah Messenger, this session explored some of the barriers to innovation in the fight against the climate crisis and accompanying solutions to overcome them.

Barriers to innovation and role of the youth:

Jean-Bertrand Mhandu (Regional Director Africa, earthday.org) noted that inaccurate interpretation of climate change is a large barrier in Zimbabwe as it has resulted in policies and laws that inadequately address climate change and hinder innovation. He added that climate change presents an opportunity to change our ideology. He also called upon the youth who have more creative mindsets to think beyond the current status quo. He emphasized the need for more resources to mobilize the youth, not just in structured projects, but also to explore their creative concepts.

Potential of space technology:

Samantha Cristoferrati (Astronaut, European Space Agency) described how seeing the earth from space clearly elucidates how everything is interconnected on our planet. She further noted that the burden of climate change is primarily carried by vulnerable communities as they do not have the tools to adapt. In thinking about such barriers, she stressed the untapped potential for space technology to help in the fight against climate change. For example, space-based technologies can be used to assess and measure methane leak identification, deforestation, and restoration activities. Space assets are also global and can bring

data to where it is needed most through institutions such as UNDP, World Bank, and other international NGOs. Nothing measures up to space-based observation satellites on a global scale, which can revisit places with high frequency and precision to collect important data. She emphasized the need for making space-based information available to policymakers. Since climate systems are extremely complex, the collected data must be presented in one understandable and integrated model. Such a model can predict the future to understand how action turns into consequences. The space revolution also needs to meet the digital revolution through, for instance, the use of high-performance computing and AI.

Examples of innovative solutions:

Rwodah Ibrahim AlNuaimi (Director of Strategic Partnerships, Qatar Fund for Development) highlighted three initiatives that are currently being implemented. First, Qatar's Development Fund's Climate Change Strategy which focuses on SIDs and projects that align with NDCs and SDGs. Secondly, the UNDP Accelerator Labs help replicate grassroots ideas to tackle common issues. And lastly, the Green Entrepreneurs Networks Project particularly their fund that focuses on women and youth to facilitate the creation of green jobs in the global south.

Session 4: Accelerating climate innovation for cities and communities

Description In this session, environmental leaders explored strategies which cities and communities can implement to accelerate climate innovation. Panelists agreed that multilevel collaboration, standardization of practices, and climate-focused digital transformation are optimal strategies for cities and communities to achieve net-zero.

Multilevel collaboration:

For cities to become innovative leaders that meet the targets of the Paris Agreement, multilevel collaboration, coordination, and cooperation is required. While cities and citizens provide bottom-up climate-action strategies, it is also important that exchange and capacity building at the local, national, regional, and international levels takes place to generate long-term impact. Such collaboration serves to identify challenges and shared solutions, which can be adapted and applied to local contexts. Jorn Verbeeck, Head of Research and Innovation at the Global Covenant of Mayors, noted that a city's complexity and unique circumstances must

be considered when establishing climate action strategies. These complexities need to be understood to turn pledges into tangible actions aimed at maximizing impact.

Standardization:

Panelists stressed that setting common standards to facilitate mitigation actions is integral. Silvio Dulinsky, Deputy Secretary General of the International Organization for Standardization, asserted that setting such standards unburden cities so that they know and understand their capabilities and avoid the practice of greenwashing. Without the establishment of standards, we will be negotiating needlessly in a climate crisis where time is of the essence. Sharing a

common understanding of what net-zero is, and how it can be measured, fosters transparency between cities.

Digital transformation:

Energy efficiency has much to gain from digitalization, which is why we need to ensure that digital transformation is aligned with climate targets. Clean urban transport, including car-sharing, is just one example of how digitalization is being harnessed for climate action in cities. For cities, net-zero is the ultimate target, however, we need to move beyond strategies that focus solely on incentivized solutions for emission reduction, and towards the incorporation of a framework that measures emissions enablers.

Session 5: Deep-dive presentation: Current challenges facing global carbon accounting practices in industrial supply chains, and the COMET Framework

Description This session explored the current challenges facing global carbon accounting practices in industrial supply chains, along with unpacking how the COMET Framework intends to address these problems. Collaboration and scalability were deemed necessary to strengthen and harmonize accounting practices.



COMET Framework and the harmonization of carbon accounting:

The COMET project partnership with UNFCCC emphasizes the need to harmonize and converge carbon accounting for stakeholders through the utilization of national accounting mechanisms. Such harmonization is essential to ensure that actors know their actual carbon footprint and can assess comparability. Paolo Natali, Principal at Climate Intelligence RMI, stressed that the idea behind harmonization is not to provide a new methodology, but to provide clear principles to key sectors. Jordy Lee, Program Manager for the Supply Chain Transparency Initiative, noted that these principles need to be contextualized, addressing in-

dustries and their specific challenges, rather than simply stating that material A is more sustainable than material B. The baseline of standards therefore needs to align with the baseline for sector specific work. The goal is to develop an accounting system that showcases climate enablers, including cities, and how they avoid and reduce emissions.

Collaboration and scalability:

Given how many disclosure entities there are at present, collaboration and scalability will be key to achieving harmonization. Such collaboration must incorporate all sectors and businesses, making evaluations more affordable and providing support to smaller companies in their accounting.

Session 6: Consumers-based GHG Accounting on supply chains

Description

In this session, panelists discussed the importance of consumer-based GHG accounting, along with addressing transparency and security issues pertaining to the disclosure of data. Growing interest and momentum in the area of greenhouse gas accounting has resulted in the need for regulatory framework at both the national and international level.

Regulatory framework:

The panelists agreed that there needs to be a stronger push for the alignment of GHG accounting and reporting standards. Both Catherine Atkin, Director of the Stanford Codex Climate Data Policy Initiative, and Martin Wainstein, Executive Director of the Open Earth Foundation, argued that these standards must be backed up by policies, which unite state and non-state actors with the broader goal, the Paris Agreement. In the Canadian province of British Columbia, it is already a legal regulation for industries to report their carbon footprint to the government, however, in other locations around the globe GHG accounting remains voluntary.

What measurements are then needed to drive the establishment of regulatory policy and convince

industries to conduct reporting? Wainstein highlighted that established GHG accounting pilot programmes provide a blueprint for policymakers, along with illustrating that basic carbon accounting does not have to be a difficult procedure. Furthermore, such pilot studies are only building in interest and momentum, while procedures for GHG accounting are continuously being simplified. Atkin emphasized that as an increasing number of individuals are demanding low carbon and no carbon alternatives, consumer behaviour based on disclosure is another force that serves to push both companies and policymakers to establish a regulatory framework. Panelists agreed that such a framework would also require the establishment of international standards to ensure that the stakeholders involved in global supply chains share common understandings and practices.



Security and transparency:

A key topic addressed by Wainstein explored how to convey transparency, alongside security. This is possible using cryptography, and specifically zero-knowledge proof. Through this method, one party can provide information to another party, revealing if a statement is true without disclosing information found within the core dataset. Parties can therefore protect their privacy while creating open-source accountability with the use of blockchain technology.

Session 7: Youth Perspectives on Action for Climate Empowerment & Innovation

Description In this session a panel composed of youth climate leaders discussed their own perspectives on empowerment and innovation for climate action. Rethinking the way in which education is done, along with fostering collaborative partnerships to amplify youth innovation are key strategies to empower the leaders of tomorrow and ultimately end the climate crisis.

Rethinking education:

Panelists agreed that to tackle the climate crisis, our education systems require a re-evaluation. Rather than teachers dictating to students the information they are required to memorize, youth should be encouraged to solve problems independently and utilize inquisitive learning strategies. Furthermore, how information is communicated to students often portrays challenges as if they are too burdensome to attempt finding solutions for. 'Let's have fun while saving the planet', for example, is a more inspiring and action-oriented message than 'let's save the planet or we will all die', as highlighted by a Professor of Electrical Engineering at Virginia Tech. Furthermore, investments and climate-related projects should focus on the quality of ideas presented, rather than the academic background and number of degrees an individual possesses. Rethinking our

education systems serves to not only empower the leaders of tomorrow, but also foster youth innovation.

Youth innovation:

For panelists, it was clear that collaborative partnerships are an important tool in strengthening youth innovation. Strategies to nurture such collaboration include building intergenerational partnerships, incorporating youth experts into projects, and supporting interdisciplinary collaborations between students in different faculties at different academic levels. Youth competitions, such as Digital Art 4 Climate, are an exciting and participant-oriented way to spread awareness and discover new approaches for climate action. Panelists also highlighted the importance of promoting cultural and social innovation strategies, which includes providing platforms for indigenous peoples.

Session 8: Tokenization of Green Bond

Description In this session, Katherine Foster and Massamba Thioye who are on the Advisory Committee of the Bank for International Settlement Genesis Project present their prototypes of a secure green financing and bond. This is in the interest of green bond tokenization.



Digital platforms for green bond tokenisation:

In many countries, issuing and investing in bonds can be cumbersome and complex, involving many steps and parties, and typically requiring a considerable financial commitment from the investor. Katherine Foster says that for those investing in environmentally friendly projects, there is uncertainty about whether the bond issuer is delivering the positive green impact it committed to at issuance. Also, there are typically no liquid and transparent secondary markets for retail investors. The BIS Innovation Hub and the Hong Kong Monetary Authority (HKMA) successfully developed two prototype digital platforms that bring to life the vision that an investor can download an app and invest any amount into safe government bonds, which will develop a green project. Over the bond's lifetime, the investor can not only see accrued interest, but also track in real-time how much clean energy is being generated, and the consequent reduction in CO2 emissions linked to the investment. Further, the investor can sell the bonds in a transparent market. It explores the green art of the possible through combining blockchain, smart contracts, internet-of-things, and digital assets. According to Massamba Thioye, these Green Bonds are a big step for innovation and localized projects as it gives concrete viability in terms of funding and financial mechanisms.

Two complementary technical prototypes:

The Daml prototype seeks to accomplish the following goals: 1. Bring greater efficiency and transparency across the end-to-end bond issuance and lifecycle workflow. 2. Ensure licensed institutions can comply with current regulation schemes. 3. Create a reference Utility for the design and implementation of a production-grade system used in the Hong Kong green bond issuance process. 4. Increase transparency and ensure delivery of ESG covenants to better showcase green impact through the combination of blockchain, smart contracts, and the Internet of Things (IoT).

The Liberty prototype develops a technology sample to concept-test a government issued digital asset for the retail market in Hong Kong. The prototype aims to improve investor participation by streamlining the overall bond issuance and lifecycle processes, allowing direct exchange amongst asset holders,4 facilitating the tracking of the green impact of invested funds, and allowing a smaller minimum allocation size. The prototype provides technology insights into potential applications for distributed ledger technology, specifically public decentralized ledgers, and how they may be integrated into the existing financial ecosystem within Hong Kong.

Session 9: Presentation on the Global Intergrid for Sustainable Energy Abundance

In this session Dushan Boroyevich, University Distinguished Professor, Virginia Polytechnic Institute and State University introduced the Global Intergrid for Sustainable Energy Abundance project. The project seeks to replace the old grid with a new grid that can adjust to energy flows. The total cost of this grid will be around 6% of global GDP over the next 30 years and will result in the achievement of the 1.5C target (this cost accounts for the grid and the renewable energy it will run on). Speaking on its unique value addition, Dushan noted that the proposed grid is an alternative to battery storage which is more nationalistic, and it will help send energy all over the globe much like telecommunications. Further, he noted that the world is projected to be using 10x more energy by 2050 due to increased population and electrification, and the proposed intergrid will address this scale. He added that the technology needed for the global intergrid are available. Based on initial research, global supplies of silicon, aluminum, plastics and energy are sufficient for this project however, he noted the need for more research and data.



DAY#6 SATURDAY, 6 NOVEMBER 2021

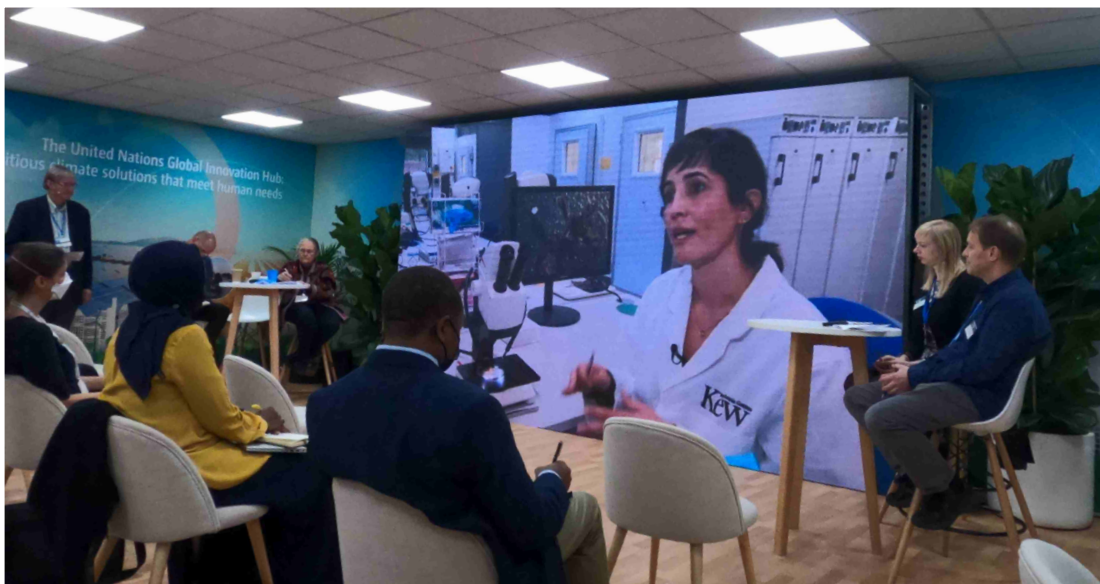
UNIDO Awards: Technological innovations to addressing adverse effects of climate change - An introduction to four award-winning technologies

The UNIDO Global Call for Innovative Solutions in Cleantech and Sustainable Land Management attracted nearly 300 applications from private sector entities from over 70 countries, each presenting a unique technological solution to decarbonizing the four award categories: Decarbonizing growing urban environments; Clean and efficient energy generation and storage; Circular production and industrial processes; and Sustainable land management. Initiated by UNIDO ITPO Germany in close collaboration with Future Cleantech Architects, UNCCD and UNFCCC, each application was carefully screened and handed over to an expert jury for the ultimate selection of the best innovative technologies.

Co-moderated by FCA's Founder and CEO Dr. Peter Schniering and UNIDO ITPO Germany's Deputy Head Vanessa Voelkel, the winners of each category presented their innovations to an audience of stakeholder and decision-makers via videocall, giving the audience the chance to discover new and innovative solutions to rapidly reduce existing emission levels and prevent further emissions growth. This presentation showcased the UNIDO Global Call 2021 award winners, who each introduced their technological solutions and demonstrated how their projects can contribute both to addressing adverse effects of climate change and to promoting inclusive

and sustainable economic development. Co-moderated by FCA's Founder and CEO Dr. Peter Schniering and UNIDO ITPO Germany's Deputy Head Vanessa Voelkel, the winners of each category presented their innovations to an audience of stakeholder and decision-makers via video call, giving the audience the chance to discover new and innovative solutions to rapidly reduce existing emission levels and prevent further emissions growth.

In the category "decarbonizing growing urban environments", the Canadian synthetic modelling company RUNWITHIT Synthetics Inc. won first place for their advanced simulations that allow stakeholders to innovate, optimize, and decarbonize mobility in growing cities. German innovators batteries AMPS GmbH took home the prize in the category "clean energy generation and storage" with their modular, mobile, multipurpose, and connected second-life battery system. First place of the third category, "circular production and industrial processes", went to PolyCare Research Technology GmbH & Co. KG, a German company producing sustainable building blocks made from durable and environmentally friendly polymer concrete. Finally, Zhejiang Chint New Energy Development Co., Ltd. were named the winners of the category "sustainable land management" for their cutting edge agrovoltatics systems.



DAY#7 MONDAY, 8 NOVEMBER 2021

Session 1: Climate-resilient crops for future food security and livelihoods

Description In this session, the panelists discuss the importance of crossing crops in order to obtain more resilient species and help farmers to maintain and increase the yield despite the challenges posed by climate change, all while preserving biodiversity. Using examples of ongoing pilot projects, they discussed the need of focusing on the water-energy-food nexus, social and cultural aspects of sustainable farming, and on the practice of involving farmers in co-designing new and more sustainable farming processes.

The global food system:

fragmented yet solidated - There are 500 million farmers in the world, yet only 10 multinational companies control most of the food in the world. Small-holder farmers produce 35% of global food and are the most affected by the negative effects of climate change, leaving them with three adapting strategies: climate-smart agriculture; changing crops; or migrating.

WEF:

Water-Energy-Food - More than $\frac{2}{3}$ of the world population have no direct access to energy, which is crucial to activating farming processes that can increase crop yields whilst preserving biodiversity. For instance, energy provided by solar panels can also decrease the daytime temperature on

farmed soil, increasing production by 30% and significantly decreasing the amount of water needed.

Farmers with an impact:

Farmers play a crucial role in sustainability. They can: reduce the impact of climate change; implement changes in the agri-food system; and improve the livelihoods of rural populations.

Crop-crossing:

Crossing different species of crops can help them survive climate change (e.g. 60% of the coffee species are endangered with extinction), create new, adapted, and ultimately more resilient biodiversity, thus increasing yields and, ultimately, freeing up farming land for other crops.

Session 2: Potential for transformative climate action in the nutrition & health value chain

Description This session, moderated by Jim Woodhill AgriFoodNexus Consulting/ Honorary Research Associate, Environmental Change Institute, University of Oxford, discussed correlation, challenges, solutions, synergies, and tradeoffs between climate solutions, nutrition, public health, and crop production. All panelists agreed that integration, cooperation, and collaboration along the value chains of food production are required to establish nutritious food while being environmentally friendly.

Challenges and solutions to nutrition and environment:

Oumar N'Diaye, representing Nutrition International in Africa noted that to boost public health and nutrition, there is a need of integrating nutrition in other sectors, increase access to food systems and innovation at the community level. Nutrition International for example has provided technical assistance to financial institutions in Africa to make their investments, regardless of their nature, more nutrition sensitive. **Anitha Seetha**, a nutrition scientist at International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), stated that a major challenge in nutrition is the dependence on high carbon footprint crops that consume a significant amount of water and with less nutritional value such as wheat, rice, or maize. Ms. Seetha called for diversification of staple foods to include more nutritious, less carbon-intensive and drought-resistant crops such as millet. **Lesley Mitchel**, representing Forum for the Future, stated that although food contributed to 33% of the total GHG emissions in

the food and agriculture systems and the majority of biodiversity loss, there has been a promising increase in attention to systemic approaches that tackled problems across a system. As an example, she highlighted the Growing our Future project which focuses on regenerative agriculture to enhance healthier and sustainable diets. **Tom Bruulsema**, representing Scientific Panel on Responsible Plant Nutrition, stated that the panel aimed to consider environmental dimensions of farming such as emissions and to create a paradigm where soil health, carbon sequestration, circular economy and recycling, and nutritious human diets are the main focus. **Jeremy O'Brien**, representing Psiquantum which is a quantum computing company that works with several industries, highlighted the importance of the digital transformation in applications related to chemistry since it could provide insights on activities on the molecular levels.

Synergies and tradeoffs between emissions and nutrition:

Mr. Bruulsema stated that increased

emissions dilute the nutrients present in the plants, which is a tradeoff that should be addressed. However, a synergy between crop production and soil health is that crop production diversification can contribute to healthier soil. Ms. Seetha stated that there are synergies especially in the example of millet, which is more nutritious, more fertilizer-efficient, and less harmful for the environment. Mr. N'Diaye stated that there was a synergy between nutrition and emissions since improving access to food systems reduces transportation emissions. There was an agreement that consumption should be shifted towards more nutritious products by raising awareness and creating information programs for local communities. Ms. Mitchel stated that fundamental tradeoffs could be eliminated since there is a direction towards creating and designing more sustainable value chains through integration between different sectors.

Does the solution require radical changes?

Mr. O'Brien stated that solutions have been introduced long



time ago, but establishing political, economic, and social will to implement such solutions is still required. Mr. Bruulsema emphasized that there are several ways by which sustainable value chains could be created such as recycling and recirculating of treated wastewater to be used for irrigation purposes and production of green ammonia fertilizers. Ms. Mitchel highlighted that while a part of the solution relies outside the box, another part is and has been inside the box for a long time. However, the challenge is to determine how to deploy such solutions. Mr. N'Diaye emphasized that we should learn from situations such as COVID-19 lockdown in order to determine our needs and possible innovation trends that would lead us to the solution.

Session 3: Food chain transformation: taking holistic approaches Nutrition & Health

Description In this session the panelists discussed how and through what kind of innovation the food chain system could be transformed and made more sustainable, whilst at the same time responding to the increasing demand for food and healthier diet from the increasing world population. Special attention was given to the role of cities, the unprecedented level of complexity posed by climate change in relation to the food system and therefore, the need for enhanced cross-sectoral cooperation to assess the risks and identify innovative solutions to change the system.

Food System Summit:

The summit brought together experts and practitioners and received 2200 ideas on how to change the food system chain and make it more sustainable. Of these ideas, 59 of them were organized into cluster-solutions for system innovations. They pointed out the importance of:

1. innovation at the regional level;
2. enabling societal institutional innovation;
3. data and digital innovation
4. increasing investments in food innovation (currently governments spend, on average, only 1% of their GDP on food innovation).
5. the creation of a food network (instead of a food system)
6. more collaboration, especially between the production side and the retailer side

The role of cities:

Cities can pull several different levers that can affect the market in ways that would make it more sustainable. For instance, cities can affect the demand curve, by supplying food directed to the marginalised

communities through, for instance, creating spaces within cities dedicated to urban farming or securing the urban food system to create social inclusion and fight social fragility. Another way in which cities have a crucial role is in enhancing biodiversity and freeing up land for more sustainable farming by turning into urban forests and increasing green spaces in cities.

Learning and assessing risks:

Our society is facing a challenge, climate change, which is unprecedented in scale, pace and complexity. Therefore, it requires an unprecedented level of collaboration, learning and risk assessment. Collaboration becomes a challenge in the current system which is entirely based on competitiveness; thus, the system needs to be turned upside down and collaboration becomes fundamental to achieve the necessary learning and scale it at the global level. Finally, to convince all the actors of the system that a dramatic change is needed, we must reconsider the way we assess risks: is it more concerning to foresee loss in their business, or the total extinction of the human species? This is not just a matter of financial metrics, but mostly the need to redefine the core values at the center of the system.



Session 4: Reducing the food production footprint (through low-carbon practices, circular approaches and enhancing the soil carbon sinks)

Description In this session, the panelists discuss the important role that healthy soils can play in fighting the negative effects of climate change and push for more sustainable farming. They also argue that a substantial decrease in the production of food waste can only happen if customers are well informed and thus have the instruments to make informed decisions. All these changes, though, can happen if small-holder farmers, big companies, the financial system, and the users collaborate together in a co-design/co-creation/co-ideation process that will lead to the drawing of a brand-new system.

Healthy soils

A healthier soil can contribute to financing the transition to a more sustainable farming in three ways, namely, increasing productivity; storing CO₂ in the soil and making owners earn carbon credit; to preserve and maintain biodiversity. It is necessary to diversify the farming to allow the soil to be healthier. For instance, a system like in the Netherlands, where 70% of the soil is devoted to livestock, is not compatible with the increasing demand for food globally and, at the same time, the need for more sustainable farming. A complete shift is in order that can transform the food chain by primary data supply chain mapping. The consumer can only change their behaviors if they trust in the labels and will digitally get the information of the products.

The large-scale adoption of climate-smart practices towards Farmers

The approach is to put farmers in the centre of all the collaborative works while understanding the need of farmers by running surveys around 1,800 farmers currently. The knowledge and technology of the cluster of the UN Food Systems Summit deliver the solutions that will help transition the platform model of 100 million farmers and 1 billion consumers to a food system transformation and towards a path that is positive for the people, nature and climate. There are four areas of the core collision that help bridge the gaps and have the chance to create the solution, which are awareness and knowledge; financing and risk man-

agement; data governance; policy and regulations.

Prevent food waste

Food waste contributes to 11% of the global emissions of CO₂, therefore, it is crucial to reduce the volume of surplus food generated. Food wastage could be prevented in many ways: for instance, customers could be charged different prices depending on their expiry date. By saving food waste at the retail end only, we could save 40 megatons of emissions every year, which roughly coincides with the full yearly emissions of the UK. Moreover, that would make retailers save circa 8000 GBP per year. Another way to reduce food waste, which could be harsh on the consumers would be to include in the cost of each product, the cost of its production. For example, it should no longer be possible to have a hamburger for 1USD, but rather that should have a premium cost.

Peer-to-peer talk

Collaboration between farmers is essential so that they can reassure each other on the practices needed to ensure the transition to zero net farming. Net-zero farming will increase yield and at the same time use less land. This process of co-ideation/co-design/co-creation between farmers will also have to involve the big companies and the financial system, in order to make it financially viable on a global scale. This approach shall look at consumers not just as receivers, but also consider their cultural traditions, identity and family tradition. In this way, consumers will have more information and be able to make more sustainable food choices.



Session 5: How do we address key health and nutrition challenges within 1.5 °?

Description In this session, the panelists discuss the effects that different kinds of diets in the world have on climate change and of the possible ways ahead to change them in order to make them more sustainable for the Planet, whilst at the same time satisfying an increasing demand for food.

Co-creation, co-ideation, and co-design:

It is necessary for there to be co-creation, co-ideation, and co-design between farmers, big companies, and consumers. These are the three keywords that will help to involve all the stakeholders involved, including the big companies and the financial system, to make sustainable farming financially viable on a global scale. This approach shall look at consumers not just as receivers, but also take into account their cultural traditions, identity and family tradition. In this way, consumers will have more information and be able to make more sustainable food choices and, as a result, change their diets. As food is so inherently part of people's culture, to change it is a very difficult decision, it means asking people to leave their comfort zones. That is why to facilitate this, consumers need to be involved in the process. Also, more helpful communication is required to convey to people that there are amazing solutions that can introduce positive change in their lives.

Session 6: Broadening the view: landscape approaches to address the tensions between production and conservations

Description In this session the panelists discuss the relationship between farmed land, biodiversity and the necessity to protect soil in order to maintain high yields that can support the growing global demand for food. In particular, taking into account how intensive farming is damaging soils and therefore will cause a decrease of food production, rather than an increase, and at the same time a loss of biodiversity, the panelists address what kind of incentives could push forward solutions for more sustainable farming.

Landscape as a mental health resource:

Climate change is creating isolation of small farmer communities which, in turn, becomes a threat to the quality of their products when not a direct threat altogether to their business. Access to the natural landscape surrounding farmers communities should be guaranteed as it has potentially immense positive effects on the mental health of the farmers and of their families.

How to incentivize diversification in farming:

By 2050 the cropland yield will reduce by 10% due only to the soil degradation caused by intensive, non-sustainable farming. More crop diversification is needed however, it also needs to be incentivized. How does one government do that? For instance, by introducing carbon credits, or creating programmes that go beyond healthy soils and connect to that other concepts and targets, like healthy food and healthy diets.

DAY#8 TUESDAY, 9 NOVEMBER 2021

Session 1: Climate contribution of digital tech

Description In this session, Harold, Global Climate Action UNFCCC; Miral Alaraj, Patch; Arun Ghosh, KPMG; Jeremy O'Brien, PsiQuantum Corp; and Alexey Shadrin, Evercity elaborate on the role of decentralized technology in the climate contribution of digital technology.

Sustainability of Crypto tech and blockchains:

Arun Ghosh believes that although crypto technology and blockchains are currently energy intensive, it is on its way to having a net positive effect for the environment. This is because energy efficient computing and blockchain is being rapidly developed and also as there is a clamp down of operations in China, there is a migration to the west which would not make them reliant on coal or other fossil fuel. Arun Ghosh believes that we should embed impatience and be impatient in every waking moment to really deal with climate change. It is important to share data, governance, policies and create a public eco-system surrounding this data. Another important issue to be tackled is the storage of data. Without the sharing of data and a certain transparency, no amount of technology would be effective.

Carbon offsets and removals:

Miral Alaraj says that the momentum of crypto must be leveraged for the purpose of carbon offset and carbon neutrality. Patch attempts to perform this leveraging by helping to embed the footprint of mining and trading within every crypto transaction so that the emissions can be neutralized. Patch is an API marketplace for carbon offsets and removals. It makes the process of carbon offsets and removals more accessible and democratic by making these groundbreakingly human engineered technologies more accessible, which would otherwise not be possible for individuals.

Quantum Computing:

Jeremy O'Brien breaks down the myth that quantum computing is centuries away, to say that

it is actually only a few years away. Climate Change provides a space for application of this quantum computing. However, he believes that we must find solutions to the climate change problems without the use of technology, and then parallelly develop technologies to deal with the problem. This would lead us to reaching more comprehensive solutions.

Accessibility of Climate Finance:

Alexey Shadrin and his team has developed a product called Evercity which makes climate finance more accessible than ever. We need climate finance urgently; 99% of the global debt needs to become sustainable. Until now, climate finance was seen to be complicated to structure, costly to issue, and hard to trace its impact. However, Evercity solves these issues and simplifies portfolio management, digital asset issuance, and monitoring and reporting. He then runs us through the smooth functioning of the product. This product makes climate finance accessible because of its decentralized nature that accounts for all the challenges climate finance has.





Session 2: Systems Change - Climate Chain Coalition

Description This session introduced the Climate Chain Coalition's work and members. The Climate Chain Coalition is a global initiative that facilitates collaboration among members and other stakeholders to advance blockchain and other related digital solutions to help enhance MRV (measurement, reporting, and verification) and mobilize climate finance. Some members also presented their work and highlighted some examples of success on how blockchains can help enhance transformative climate action.

Owen Chief Technical Officer, Gold Standard:

Owen stressed the need for value chain monitoring, reporting, and verification. The main important aspects of supply chain transformation are data quality, data traceability, and inflection point planning for companies. However, value chain accounting is complex and presents both a challenge and an opportunity. Firstly, there is currently low-quality data and poor traceability. Apart from these two challenges, companies also must undergo major inflection points to achieve net-zero. If the value chain data is not properly accounted for and attributed to the right entities, companies miss the required inflection points and thus the targets set will not be realized. He noted that another major theme for value chains is who is best placed to map out those decarbonization pathways to transformations, and how best to enable and incentivize people to work together on it.

Neil Cohn, VP, Chia Network:

Neil also emphasized the need for reliable monitoring, reporting, and verification systems and technologies. He noted that currently there is inequality as to who accesses the available technologies, and this can be attributed to many factors including limited energy

access and inadequate resources. He stressed the need for collaboration and enhancing access to the already available innovations. As an example, he explained that Chia Network is a public blockchain that is based on proof of space and time, and seeks to promote inclusive prosperity, not the concentration of wealth.

***Tia Kansara,
Replenish Earth and Resilience Frontiers:***

Tia noted that there is a need for a paradigm shift that focuses on global commons. One of the biggest challenges being faced today is how to change the way we think. For instance, there is a need to shift from the current egotistical perspective to a transboundary one that puts the global commons at the center. One critical question is defining the governing principles for the global commons and how they can be introduced through protocols in the design of innovations such as blockchains and other digital technologies. She further noted that what is needed is less about incremental changes and more about exponential shifts as topical solutions are not serving us anymore and have limitations. At the Resilience Lab, they explore how to create structures, platforms, and education methodologies that can shift the way we design our mindset about the desired solutions, without the inertia that we inherited.



Session 3: Measuring and Attributing Climate Contributions: A Methodological Framework for Scope 3 Activities Indirectly Reducing GHG Emissions

Description This session introduced a new framework for assigning, assessing, and evaluating greenhouse gas emissions within value chains to help incentivize and empower solution providers. The session also included a presentation by Colin MacIsaac (CEO, Bertling) on the practical application of the proposed approach in the context of global data value chains and the reduction of Scope 3 emissions in the provision of cloud services.

Empowering solution providers:

Justin Macinante (Edinburgh Law School) introduced the framework explaining that it seeks to measure and attribute mitigation activities to enabling solution providers. It will do this both retro- and prospectively. The former establishes the mitigation outcomes that technology, finance, culture change, and other mitigation projects have had on baseline GHG emissions, and attribute GHG reduction to components along the value chain leading to those reductions. The latter forecasts emission reduction potential for components of existing and new value chains (i.e., for potential interventions in product manufacture, service delivery, societal interactions). This enables market participants to assess the maximum possible reduction in GHG emissions for the minimum investment by allowing a range of interventions to be modelled, and total GHG emission reductions to be calculated for each scenario. It would also enable the evaluation of previous investments to assess the GHG emissions reductions they have achieved and evaluate the relative value of those reductions. Both require the ability to segment value chains into component parts to assess and assign climate impacts to these components and aggregate these contributions to determine the climate impact of a given business process/value chain. Designing (Y1), building (Y2), and testing (Y3) this framework, and the individual operations required to enable the

operation of this framework, are the goals of this project.

The role of law:

Using examples, Navraj Singh Ghaleigh, Edinburgh Law School then explained how law and lawyers can make a positive contribution to the project. One way is through the inclusion of climate change-related clauses in contractual terms for value chains. Contracts can help provide accurate reliable and legal information that can be fed into some of the computational approaches proposed by the framework. Ashley Lloyd (Business School, University of Edinburgh) focused on the data center as one of the project's activities explaining that it provides computational support for the way supply chains are managed, reconfigured, and allocated resources. Using examples, Adrian Jackson (EPCC, University of Edinburgh) elaborated on how they are using large scale computational systems for research on the project.

Scope 3 emissions:

Colin MacIsaac then gave an overview of Bertling's project that seeks to measure Scope 3 emissions in the supply chains from points of shipment, to delivery to their customers, and allocating them to their client base. He noted that getting people to accept their Scope 3 missions is challenging.



Session 4: Cities Mission GCOM Event

Description

Cities Mission focuses on urban transition with numerous initiatives that are needed to move commitment to action, implementation and deployments. The mission-based approach is bottom up, looking at the individuals needs of cities and driving carbon neutrality by 2030. Therefore, this session is to build the Mission on a lot of partnerships, to avoid duplication and to increase efficiency, but also move together to demonstrate the speed and scale of what it is deploying.

Introduction of cities mission:

Over 11,000 cities and their mayors around the world, who are focusing on climate actions, are reporting their greenhouse gas emissions through GCOM. It is a system with transparency and accountability, databasing for cities to track their missions so they can apply themselves to Climate Action Plans, which is a large alliance with a lot of mayors and cities working together. However, Global South cities should be prioritised, where population growth is by far the largest, which has consequences for the climate. Besides, there are three principles including simplification – so innovative solutions can be applied to all types of cities; scaling – being able to scale the pilot level of high impact actions to other cities; and synergies – driving partnerships which innovatively shift the existing system to one that is low carbon. Role of Research & Innovation and National Local Dialogue in the Urban Energy Transition: JPI Urban Europe is a transnational intergovernmental research innovation program dedicated

to urban transition, which aims to build the capacities to drive the transition, to bring strategies into action. Over the last year, it has already been investing more than 120 million euros in research projects and different kinds of activities to mobilise the communities. And now JPI Urban Europe is reaching out globally and internationally to drive this transition, to make sure that the knowledge created in research is available and accessible for the city makers throughout countries.

Local voices:

Cities such as Makati in the Philippines need public partnerships to amend the limited resources for energy transition and other climate actions. The shift to clean and renewable energy is aggressively presumed, which is committing to achieve net-zero greenhouse gas emissions by 2050. However, with multiple challenges such as lacking the quick charger of infrastructures, the city governments should collaborate with national government agencies, civil society and other organisations to create

sustainable plans engaging with public and private sectors for climate financing and the implementation of environmental laws for the use of renewables.

International agencies:

Societal innovation is as a core principle in the mission, meaning that the clean energies transition that has to be accomplished must embed core human, economic and social dimensions. The current processes are involved with opening new territories that emphasise two initiatives – reports focusing on digitalisation and convening mechanism.

How to build the first wave of mission:

The mission-focus approach is necessary to ensure that the innovation is delivered. Countries, cities and innovators who want to drive forward the frontiers can demonstrate what is possible and feasible and will change the conversations, the landscape and the discussion globally. Therefore, the mission is focusing on collisions of the



first waves that would drive the frontiers, having a very clear goal about what it wants to achieve.

Building blocks for clean urban energy:

To decarbonize the city means a clean urban energy system providing heat, power and mobility. Due to the diverse size and energy system of cities, it is a complex task to work out a blueprint for each different urban environment, as decarbonisation must mitigate, be resilient and give fair access to energy. Cooling is one of the building blocks that contribute to decarbonised cities as urban areas are heating up at twice the global average; sustainable cooling and working together can help in “beating the heat”.

Deploying the mission:

Climate and energy challenges are urban, and cities provide great opportunities to become innovation hubs so that the climate-neutral solution can be demonstrated. Cities are also where policies meet people, meaning that the engagement of citizens is important to make this mission-approach valuable. To find a solution to huge challenges, we need to collaborate, establish the network and integrate all the innovations to drive this urban transition forward. Therefore, a global knowledge exchange platform is established to exchange information on zero-emission pathways for the urban environment.

Session 5: Green Power Future Mission: Launch of the Joint Roadmap of Global Innovation Priorities

Description In this session, the Green Power Future Mission co-led by China, Italy and the United Kingdom launched their Joint Roadmap of Global Innovation Priorities.

Summary

The Green Powered Future Mission, co-led by China, Italy and UK, unveiled its Joint Roadmap of Global Innovation Priorities on 9 November during a dedicated event at the UNFCCC Innovation Hub pavilion. This Roadmap identifies 17 R&I themes and top 100 innovation priorities to be tackled within this decade to achieve the Mission goal of demonstrating that power systems, regardless of geography or climates, can effectively and affordably integrate up to 100% VRE in their generation mix by 2030 while ensuring the system is cost-efficient, secure and resilient.

The Roadmap has been developed thanks to the joint effort of all Mission's 27 members from governments, international organizations, and the private sector, and will guide the upcoming activities in view of the launching of demonstration projects already in the years 2022-2024.

On the pavilion stage in Glasgow, the Mission Director Luciano Martini from RSE (Italy) opened the event and then together with colleagues from China and the UK introduced the Joint Roadmap. High-level government representatives from UK, Italy and China clearly stated their countries' commitment towards the Mission goal, while industry leaders expressed their view in a panel discussion reiterating their will to implement and support the Joint Roadmap.

If you missed the live event, you can find it [here](#), while the released Roadmap is already available on the official Mission [webpage](#) or directly at [this link](#).



Session 6: Nutrition & Health core-needs in the Andean Region

Description

In this session, Carlos Ruiz-Garvia, UNFCCC; Daniel Buss, WHO/PAHO LAC; Claudia Cordero, Euroclima+; Pilar Roman, Euroclima+; Rodrigo Michel, SWISSCONTACT; Horacio Ramirez, IICA; Carles Puigmat Borrelli, European Commission; and Stef de Haan, International Potato Centre- Andean Initiative discuss the importance of nutrition and health in our conversations surrounding climate change through their innovative solutions and plans for the future.

Climate-resilient and sustainable food production:

While looking at sustainable food production and food security in the Latin Americas, according to Carles Puigmat Borrelli, there are three areas that organisations focus on. They are knowledge management, empowering all levels of local organisations, and ensuring that the support and assistance reach the vulnerable persons that need it. Claudia Cordero points out an unfortunate contradiction of climate change in Latin America where 45% of the GHG emissions from the region is from land use and forestry, and at the same time, there is a receding food production system because of climate change. To solve this issue, there need to be sustainable and good practices for food production, information systems and access to financial mechanisms. This multi-stakeholder approach ensures innovation in the agriculture sector, with a focus on nutrition, by being gender-inclusive and reconciling with indigenous persons and small-scale farmers.

Innovative implementation:

Two projects presented by Rodrigo Michel and Stef de Haan show us how ancestral knowledge of agriculture and nutrition can help us adapt crops to climate change, develop inclusive business practices, increase yield, consumption, and raise awareness about climate change and nutrition through public-private partnerships, robust climate-smart agricultural practices, innovative products, and commercialization. Both the projects also proved to contribute to NDCs

and SDGs while strengthening the capacities of small-scale farmers, embracing communities of practice, using smart agricultural practices and an attempt to scale the projects up through exchange events.

Pilar Roman emphasizes that it is important to understand these are not new methods, but ancestral knowledge being passed down generations. What is innovative is in how we recognise, value, and make use of these knowledge systems. She goes on to say that there is an overwhelming majority of edible crops that are underutilized, as we only use 0.1% of the edible crops in our daily diet. Therefore, it is important to leverage those under-utilized crops, make them accessible and inclusive in their production as well as consumption, and develop methods and technologies to scale up these projects.

Climate-resilient health systems:

Daniel Buss shines a light on the importance and opportunities of climate-resilient health systems. There is massive progress including efficient efforts being placed in an inter-sectoral attempt to hold health at the forefront of climate change action. It is important to showcase the readiness of the Americas for acting for health at the forefront of climate change. It is important to understand the gravity of holding health as a core need when evaluating solutions for climate change.

Carbon footprint and inequality:

Promotion of health systems at the face of climate



change is vital. Health is to be preserved. It is a basic and core need of humans. We need to re-imagine and re-consider our structures of health systems, hospitals, medical products, and waste management. Currently, five percent of the carbon footprint is from the health sector. It is important to recognise the ecological crisis also as a social crisis. Climate change challenges the extractive model of development. Unfortunately, the people most affected by climate change are those people that are least responsible. There is an overarching problem of social inequality while discussing the intersection of climate change and health.

Health and Climate Change in Governance:

Health and climate change planning are extremely important, and it can be seen in the Caribbean Action Plan on Health and Climate Change, and

the Andean Health and Climate Change Plan 2020-2025. There must be frequent monitoring and assessments like the Vulnerability and Adaptation Assessment, resilient health system reports, as well as establishing health as a priority in the NDCs. Health and climate surveillance systems is another important intersection that cannot be ignored as it has a very strong correlation. There are also health co-benefits of climate action which can be seen in health impact assessments and avoided economic costs on health. Lastly, health is also seen to be a concrete part of climate change action with its involvement and inclusion in climate financing. This was followed by representatives of a few Latin American countries illustrating how health and climate change are seen as an important intersection in their respective regions, and the strides they have made with innovative solutions in that regard.

Session 7: Digital technology to support climate and sustainability actions

Description [Fireside chat on how digital transformation can support the green transition.](#)

Jeremy O'Brien, CEO, Psiquantum:

Jeremy and his team are aiming to deploy quantum computing in sustainability. Quantum computing is not here yet, but it is close, so we need to start thinking about it now and where we will utilize it in the green transition most impactfully, so we waste no time when the technology arrives. This process requires partnerships with stakeholders at all scales, public and private.

Steven Moore Sustainability officer, GSMA:

Steven describes how digital connectivity enables carbon emissions savings in sectors much larger than the mobile sector such as buildings, and energy and transport systems – anything you can put the word 'smart' in front of. It does this through efficiency savings via mobile connectivity. Deployment of connectivity and networking needs to be scaled greatly, particularly to the developing world. For instance, smart technologies can be put into factories; today only 1% of manufacturing facilities use such smart technologies.



Dinner Workshop: Competitions and an expanded innovations agenda for accelerated uptake of 1.5 C innovations

Description Opening remarks were delivered by Massamba Thioye, UGIH project executive, and Dennis Pamlin, Head of Mission Innovation's NCI, during which components, rationale, and objectives of the initiative were explained. Panelists discussed current innovation for smart cities and global competitions that inspire such innovation.

Smart cities and urbanization:

Aaron Oliviera, representing earth 300, stated that our lack of contact with nature resulted in an ecological threat. Thus, earth 300 aimed to create a vessel where interdisciplinary research could take place amongst a great number of scientists to bring different views to nature and restore our natural systems instead of deploying new systems. Mr. Oliviera emphasized that this vessel was a good example of futuristic smart cities because it has combined the techno-sphere and biosphere, and exploited current digital transformation and science to understand and restore our nature. Tony Verb, representing Carbonless, explained that the rationale behind Carbonless was that urbanization required both innovation and technological advancements to create a more sustainable future. Also, Mr. Verb emphasized the specific mission of carbonless which was decarbonization of Asia by use of capital, technology, and innovation since there was a demand for a carbon-

tech ecosystem due to rapid urbanization in Asia. Examples of partners of carbonless in different projects are Microsoft and MTR.

Climate-Smart Cities Challenge:

Regina Summer, representing Vinnova, stated that Vinnova had an interest in driving innovation by identifying the challenges and setting joint missions between different entities. Ms. Summer also highlighted the significance of adopting mission-oriented approaches, systemic perspectives, and a broad sense to innovate. An example of a joint project in which Vinnova takes part is the climate-smart city challenge in collaboration with UN habitat and viable cities. Steven Bland, a climate change innovation specialist at UN habitat, stated that the climate-smart city challenge focuses on zero-carbon affordable homes and congestion-based GHG emissions in Bristol, Curitiba, Makindye-Ssabagabo, and Bogota. Kathy Nothstine, representing Nesta, stated that the open innovation

competitions such as climate-smart cities are outcome-focused funding models that reward participants who meet certain challenges. Also, Ms. Nothstine explained the application steps, deadlines, eligibility, benefits, and components of the challenge.

Alignment with UGIH:

Åsa Minoz, an innovation strategist at Viable Cities, underlined the importance and vision behind climate smart cities challenge and, agreeing with Mr. Bland, highlighted the significance of following solution-oriented, need-focused, and innovative approaches that meet human core needs. Ms. Summer also emphasized the importance of identifying representative and inclusive challenges by breaking down big challenges into smaller ones and including different stakeholders. All panelists agreed on the importance of supporting and incubating startups and bringing different size enterprises together to inspire younger generations to innovate.



DAY#9 WEDNESDAY, 10 NOVEMBER 2021

Session 1: Addressing access in cities

Description In this session, speakers explored the key opportunities and associated challenges in addressing access in cities. Shifting Paradigms' Founder: Jelmer Hoogzad talked about ambitious climate action with the circular economy and took a global perspective to observe specific low-income countries, to use economic strategies to bring varied emissions down. Catherine Atkin, Director of the Stanford Codex Climate Data Policy Initiative commented on the level of political will and how this influences trust in policies and that access is the portal to address human needs. Dennis Pamlin, Head of Mission Innovation's NCI commented that the biggest gap is accessibility and encouraged the audience to consider why we need transport in the first place. ReGen Villages Holding's Founder: James Ehrlich, Founder who is an expert in regenerative and self-sufficient human settlements continued with how we need to rethink the balance between farmed land and housing land and aim at farmed land as a regenerative source for housing. In addition, he suggested that we need to reduce the burden on governments. We need to stop focusing on collaboration and focus on human needs or 1.5 compatible collaboration.

Ambitious climate action with a circular economy, Shifting Paradigms:

Circular economy is related to climate change. Approximately 62% of GHG emissions are released during extraction, processing and production at global value chains. What circular economy can achieve is to cut out this part. From the global perspective, it is mapped out that the circular economy can help close the large emission gap and bring us back on track to a 1.5 degrees world, among them, the most significant interventions are in housing, infrastructure and buildings, etc., which are also related to access. In terms of working on a country level, the steps are to define certain development priorities, map out materials flows for workshops and its analysis, which are later used as the base for reports that agree on circular opportunities and quantify the impact and then the implements as the fourth step. Moreover, on a business scale, 85% of the circular GHG mitigation potential has a positive business case. Ideally, it is aiming at getting more social sectors involved and moving them to a more active and public mobilities system; the significance of international cooperation is highlighted.

Addressing inequality:

Design principles should include access as this is the portal to get to those human needs. Inequality happens for a reason, not by mistake. Those furthest from opportunity need to have their needs met first. Multi-stakeholder collaboration is needed. Success should be measured on meeting the needs of those furthest from opportunity and it is crucial to appreciate their realities and hear directly from them. If the ideas don't align with what is needed, it is not going to work. Governments need to be supported to do things differently. We should push teleworking forward, but it doesn't have a universal application and we have to recognise the global housing market imbalance. On the other hand, online education and distance learning is powerful, but we know that community is also really important, so we need to take a nuanced approach to this that so that all of the value chain players benefit. It's policies and financing must be much different from what they are now.

Bridging the access gap:

Where is the biggest gap? It is accessibility. We need



prioritize access policy. That is, asking ourselves, why do we need transport? To go to work, to school, to do groceries. If we do not do that shift of thinking, then we end up building cities around transportation and developing a zero-carbon agenda around transport. By doing that we do not get the drones, the local production, the green spaces. In short, we don't think about how people live. Current existing structures are not based on needs, but on how to provide answers to those needs. We are stuck in that old system. Then, how do we make that leap forward? The big challenge here is to shift our thinking based on people's needs and gather the data required to understand them. It is necessary to be careful not to rush into such an approach, we need to understand the whole picture to fully address people's needs.

We must stop thinking about remodeling the car, and instead turn to more innovative and sustainable approaches to mobility. We must rethink the system, because whilst we need to stop emitting CO₂ from farming for instance, at the same time people in the global south need more food now. Therefore, we

need more cross-cutting collaboration and spend less time collaborating within the existing sector which undermines the deeper need-based approach. For instance, our system today makes us invest a lot of time in thinking about how to produce a net zero typewriter, instead of making us think about how to innovate word processing. And that happens because thinking about how to innovate word processing is not in the interest of the typewriter production business.

COP must be virtual to ensure that it is accessible, most of the people with the solutions agenda have never been to COP. For the last 30 years, we created institutions based on incremental changes. We did not think about solution providers or transparency in the process. We used a static process approach to a continuing, evolving problem. We need to shift paradigms. We need to come together to create new tools. COP could have two strands: those big problem thinkers focussing on emissions reductions and those solutions providers creating new tools to address human needs. To summarize, the keywords are access, meaning, sharing and culture.

Session 2: Green Hydrogen: Global vision of Low Carbon Hydrogen in Latin American and the Caribbean and its perspectives

Description The session focused on the importance and role of green hydrogen (H₂) as an alternative fuel for the Latin American and Caribbean (LAC) region. It aimed to discuss the advances, needs, and perspectives of low carbon hydrogen from Latin America and the Caribbean. Noelia Medina (Advisor, Ministry of Mining Uruguay), Andre Luiz Rodrigues Osorio (Director of the Department of Information and Energy Studies, Ministry of Energy and Mines Brazil) and Rosilena Lindo Riggs (SNE Panama) then presented their current and future work with regards to development of low carbon hydrogen in their respective countries.

Key challenges:

Alfonso Blane, OLADE Executive Secretary highlighted some of the key challenges noting that moving forward from strategies into the implementation phase and scaling up cost-effectively requires financing, market creation, and the development of a full supply chain to refineries, petrochemical and end-users. He added that governments need to play a key role in supply and demand and the long-term vision for the market.



Market overview and key advances:

José Bermudez from the International Energy Agency presented key findings of [‘Hydrogen in Latin America- From near-term opportunities to large-scale deployment’](#) (August 2021) and emphasized that although hydrogen had many false starts, there are strong signals for the energy sector that this time could be different – momentum is turning into action. A growing number of governments are defining the role of hydrogen in their energy strategies, the industry is moving to seize the opportunity and is increasing hydrogen-related investments, and international cooperation has taken center stage. Michelle Carvalho, Inter-American Development Bank, noted that they are currently supporting LAC countries to develop hydrogen strategies and programmes because developing the hydrogen economy helps to increase climate ambition. In addition, reducing H2 production costs and R&D and innovation is much needed in this new energy option. José Bermudez added that although there are no defined plans on how to use hydrogen in the LAC regions, there is an increasing number of multi and bilateral agreements between governments

and the private sector on hydrogen. Further, Chile and Columbia both published a hydrogen strategy in 2020. Additionally, 10 countries in the region are currently developing their hydrogen strategies.

Accelerating decarbonization of the LAC market:

GH2 can become a significant contributor to accelerating decarbonization in the LAC market and promote a post-COVID green economic recovery in LAC. Inter-American Development Bank is supporting LAC countries to develop hydrogen strategies and programmes as developing the hydrogen economy helps to increase climate ambition, reduce hydrogen production costs and R&D. innovation is key for this new energy option. SNE Panama’s Rosilena Lindo Riggs suggested that in order to achieve success in hydrogen development, governments need to be innovative and promote new ways for policymakers, technology producers and providers, and financial mechanisms to be involved. In this way, hydrogen development would be part of the country’s circular economy. Noelia Medina, Advisor, Ministry of Mining likened developing a green H2 economy to electromobility, a core action is to achieve CO2 commitment reductions.

Session 3: Human core needs – Clothing - Fashion’s role in global decarbonization and development

Description In this session, Katherine Foster from OEF is in conversation with Laila Petrie, CEO 2050 (Supporting Organization for the Fashion Industry Charter) to discuss the role of fashion and clothing as a core human need.

Fashion as a core human need:

Laila Petrie believes that fashion is often misconstrued as a creative process for humans, but not as a core need for human development. People often tend to ignore that fashion and clothing is a social good with a deep history throughout the world. It also has a huge economic impact as it provides for 430 million jobs around the world, and it has proven to increase the per capita income. Fashion is a driver of global impact

with a huge range of stakeholders as it is a broad sector.

Shifting business models:

There is a range of new business models in the fashion industry. The most visible shift in business model is the online model, although even that is nowhere next to the scale of the traditional business models still running. The online business model adds an additional level of engagement,

democratizes access to fashion, and adds an extra layer of capacity to the value chain, thus making it a slightly complex structure that still needs to be explored. Largely, there still needs to be a re-examination of traditional business models. Global consumption demand is set to increase by 63% in the next ten years, and such demand must be met in a sustainable manner, or it could negatively impact the environment.

E-Commerce, data challenges and financial mechanisms:

None of the clothing companies actually have reliable data to provide. There is a complexity and changeability in managing information in this massive global value chain. The companies and structures face a very fundamental issue because of how they have been organized. The problem of a lack of traceability and data in e-commerce could be solved through a top-down approach that focuses on a regional or landscape-based approach rather than a complex supply chain-based approach. This could possibly ensure that the small farmers and those affected by this lack of transparency and traceability get the help required. However, this does not mean that brands need to do their part as well.

People tend to overestimate the usefulness of blockchain in the fashion and clothing industry. Small scale farmers and those affected by the production process cannot meaningfully plug into the blockchain and it ends up excluding a large part of the industry in this way. To solve the issue of financial mechanisms and tools, it is important to examine policies, trade-offs from policies, subsidies and regulations, and question the specific purpose of each of these. What specifically needs to change on a granular level? Such a regional problem requires the representation of groups and communities, and thus a comprehensive bottom-up approach is required.

Fintech and green bonds:

There seems to be a shift to micro-finance, but this does not connect and reach the regions where most of the production is happening. Old technologies and new technologies need to be integrated along with capacity building at the regional level to eliminate externalities and reach sustainable financial solutions.

Youth and the future:

The youth have a huge influence on brands and companies. They are also the new customer base of these brands, which require the brands to adapt and accommodate their ideologies and needs. They are trying to understand how to give value to this new customer base. Resale, sustainability, circularity and decarbonization are the pressing needs of the time. Brands and companies need to start dematerializing and decarbonizing, and this really does not affect them financially. There needs to be better infrastructure to integrate the production and consumption patterns for a comprehensive circle economy in this sector. The fashion industry needs to balance the core needs of human development while being innovative in its products and functioning.





Session 4: Shelter as a Human Need and Expression of Identity

Description In this session, speakers explored the concept of shelter as both a human need and an expression of identity with a particular focus on mitigation through nature-based solutions (NBS) and buildings that act as carbon sinks. The panel was co-moderated by Kirstin Dunlop, CEO of EIT Climate-KIC - a core partner of the UNFCCC Innovation Hub.

Being social and keeping an open mind:

Patrycja Slawuta, Founder and CEO of Self-Hackathon noted that belonging is a shelter and we, as humans, are hardwired to be social. But it is important to consider: what are we sheltering from? That's part of the problem we are dealing with today. For instance, emotionally we shelter ourselves from people that appear different than us, or those who seem angry, or from people that have different ideologies, ideas, idols, etc. Our brain does not like constant change. We tend to grasp on certainty (this idea is the right one) and control it. Instead, the COVID-19 pandemic has created three things that messed with our psyche: prolonged uncertainty, prolonged acute stress and huge collective grief (not just for the loss of dear ones, but also for the loss of what we hoped or expected to happen).

As a result, mental health is in absolute decline. In a way, we are now sheltering ourselves, from the part of us that is confused, that is grieving, that is weak. Technology is not the solution; an open mind is the solution. So, what is an open mind? The mind is not the brain, it extends beyond the brain and the skin. An open mind helps to open the body, the nervous system. If we think about a time and place where we were fully accepted and welcomed by other human beings. That place and time represent secure attachment priming. If you believe the world is safe, then you also care more about the environment independent of political affiliation. The human mind is the most untapped natural resource.

The emotional experience of home:

Thomas Hübl, author, speaker and founder of the Academy of Inner Science and co-founder of The Pocket Project for Collective and Intergenerational

Trauma Healing noted that the instinctual reaction to a collective trauma is to seek shelter reflecting on our relationship with ourselves and with others. Safety starts in relationships and shelter is home. The emotional experience of home is even more important than the physical house or shelter we are in. All of us have been born into a pre-traumatized world, from our parents, our parents' parents and so on. It is important to understand how we feel at home in a world that is deeply wounded but where wounding is normalized. We usually are either overanxious or numb and, in the middle, there is our capacity to adapt to changes. He further added that innovation has double learning: Integration process of the past learning process and the innovation of the brighter future we draw inspiration from. Social change will not come from putting pressure on trauma. That will create a backlash.

Shelter as part of a culture:

Cara Peek, Head of Innovation and Director, the Cultural Intelligence Project's noted that culture is a shelter from the first native perspective and is the reference point of our way of being in the world. First nation people are required to be first in the discussion of climate change. Environmental health is the new world, and the global economy should be based on that. First nation people have continued to be set aside for technology and digital solutions, instead of looking at their history and culture which did not lead us to this situation but rather made us survive for 8000 years. Set ego aside and unpack your culture and cultural intelligence. Professor John Onians, Director, Sainsbury Centre for World Art, University of East Anglia, added that as humans we do not have a brain to only think, but mostly to move and go through all the mental processes that are needed to move.



Session 5: Shelter as a climate adaptation and crisis action

Description In this session, each panelist shared their own perspectives of shelter in times of crisis.

Alastair Parvin, Founder and CEO, Wikihouse:

Alastair argues that there is a paradox in housing provision: most of us agree on what we want our shelter to be: zero-carbon, safe, etc., but at the same time we have all the technology to do this. He believes the issue is not a lack of will, but about trying to put shelter solutions into out-of-date systems, whether they be planning, financial and so on. We need to redesign these systems via three points. Firstly, capacity, which means a way of building that allows anyone to do it – WikiHouse is aiming for this with timber. Secondly, we need to move away from the idea that throwing money at problems is the solution – the biggest determinant of shelter is not the physical structure, but land rights. Therefore, redesigning new forms of ownership is essential; the biggest form of capital is real estate, so the money is already there, in the land. Land value will drop by however much it costs to build these net-zero houses. Finally, we need to prototype new systems, we're guilty of a failure of imagination in terms of designing new planning systems etc. In sum, people will not invest in land that they will be evicted from in a few years, giving land security and tenure as well as the capacity and tools to build a home neatly solves the problems identified above.

Shigeru Ban, Founder, Shigeru Ban Architects:

Shigeru introduced his shelters made from recycled paper tubes, which can be filled with paper for insulation. Other materials he uses include recycled beer or Coca Cola crates. These were a response to the poor UN shelters found in disaster zones, typically made of felled wood or aluminum. These structures are not just for housing, but also for churches, hospitals, and schools. He was told by

countries to ensure these shelters were not too comfortable, as to prevent victims of disaster staying in the shelters for more than a few years. However, Shigeru sees comfort not as space, but as privacy and ventilation, which ensured many of his buildings have become more than temporary. These designs can be transferred to areas that are suffering from a lack of housing supplies and can be made from other easily accessible materials. For instance, he believes bamboo structures are the way to go in Africa, where bamboo was natural to the climate but wiped out by colonialists who did not know how to use it.

Maarten van Aals, Climate Risk Director, Red Cross Red Crescent Centre:

Maarten described how social tensions are at the heart of housing tensions in many countries, including his home country of the Netherlands. Due to rising prices making it difficult for young people to get onto the housing ladder, refugees could be seen as getting nicer housing faster in the Netherlands as they need shelter upon arrival. This case is more extreme in the case of countries in the Middle East and the Horn of Africa where disaster is more prevalent, a trend set to increase. Maarten finds that often shelter development occurs without regard for current crises, let alone climate change. For example, in Vanuatu corrugated roofs can become flying knives in hurricane winds, even though they are considered an improvement compared to their homes that are designed to be destroyed and rebuilt after the disaster. This can lead to distrust in outsiders coming in with more sensible solutions, like Shigeru. Furthermore, people choose unsafe places as they are the cheapest, such as the edges of developing cities that have little services and are unsafe in terms of infrastructure.

Session 6: Shelter as a means to climate change mitigation and decarbonization

Description This session discussed the concept of shelter as a basic human need and how it could contribute to climate change mitigation and decarbonization. The panelists underlined the importance of replacing current construction materials with natural resources such as wood and biomass.

Transforming the built environment:

Hans Joachim Schellnhuber, representing the New European Bauhaus, stated that it was unlikely that we limit temperature rise to well below 2 degrees Celsius, although not only do we need to reach net-zero emissions by mid-century to combat climate change, but we also need to withdraw carbon emissions from the atmosphere afterwards. Thus, Mr. Schellnhuber explained his vision of reversing our carbon emissions by capturing carbon from the atmosphere through natural means such as forestation and converting biomass to infrastructures and buildings.

Marco Poletto, representing ecoLogicStudio, stated that ecoLogicStudio considered architecture as a dynamic process of production instead of a function or a program while including the carbon neutrality concept and biomass materials, such as algae, that capture pollutants from the atmosphere. Mr. Poletto also stated that his perception of a shelter was an interface to how we understand and interact with our surroundings. Examples of such interfaces are including domestic gardening, introducing nutrition in workspaces, and improving air quality in playgrounds, which represent beauty to Mr. Poletto as beauty was a measure of ecological intelligence.

Martin Forsen, representing Burapha Agro-forestry,

which is an organization that invests in forestation, stated that their focus is on plantations in Laos since it was a suitable location for the forestation industry. Mr. Forsen stated that the agroforestry system used in Burapha mimicked the farming cycle through a 7-year rotation that delivers food security and higher incomes to the farmers.

Biomass in the built environment:

Mr. Schellnhuber stated that in order to restore our nature, anthropogenic mass such as concrete should be replaced by biomass and this should be done in a holistic manner that integrates both digital transformation and natural resources, which is one of the objectives of the Bauhaus. James Drinkwater, representing Laudes Foundation and built by nature initiative, agreed with Mr. Schellnhuber with the vision of transforming the built environment to be more regenerative and inclusive of natural resources. However, Mr. Drinkwater stated that the built environment moved slowly as an inert sector, which creates demand for innovation and connections between different disciplines and stakeholders to accelerate the movement of such sectors. Mr. Forsen highlighted the importance of the carbon sequestration effect of the forests, the benefits of shifting towards wood-based instead of concrete-based construction and replacing fossil fuels with biomass energy sources.



Session 7: Planet as shelter

Description The session focused on shelter and traced a number of interdisciplinary perspectives on the possibilities of reframing and rethinking of the huge impacts on global missions that human accommodation, cities, buildings. It shade light on the largest possible scale on reframing, rethinking, recasting and imaging our planet as a shelter.

Visions of planning and thinking about the process of urban civilisation:

Many cities in west and east Africa and southeast and east Asia see consistent population growth of up to 8% each year, which brings the unprecedented competition of resources, energy, food, water, land and housing. Therefore, the urbanisation transition also means that the physical spatial needs of cities are changing and it is becoming more unsustainable. However, cities are also humans' social hub where we can see opportunities for developing countries to not follow the high emission pathway that countries in Europe and North America have followed since the industrial revolution. It is driving the problem as well as providing the opportunities to innovate and add value to our planet. Anthropological, social, technological, economic and cultural approaches to innovation help integrate ideas, knowledge and visions of civil society with urban developments in order to help people organise a new form of effective thinking. This is in the aim of designing cities that incorporate the ecosystem and nature features that provide green, public space that support people to adapt to climate hazards. Furthermore, during the pandemic, the recovery process is generating opportunities to put climate actions, clean energy and sustainable developments in the heart of the city policy process.

How do we understand the diversity of the planet?

The planet needs to be viewed as a whole. A system approach is capable of transforming the political, financial and social systems that humans interact with – land, water and other natural resources. Moreover, developing countries need to urgently and carefully manage their remaining resources, and the deliver the

message of how to make peace with nature with the rest of the world. What we are facing is not only an academic research problem, institutional problem, private sectors' problem or governmental problem, instead, this problem involves all the individuals on the planet. To increase resilience for all the species on the earth, we need to have a well-defined samples collection, which requires the support from global initiatives as well as the government regulatory processes.

Design and redesign the thinking of materials and financial system:

Firstly, as we move toward a more sustainable regenerative design of living environments, it is important to reconnect the notion of shelter with how we function in nature, dissolving the boundaries between cities, buildings, urban areas and the natural system. Secondly, considering the multiple scales, questions such as what does our planet need and how we are going to manage the ecosystem become crucial. For example, scientists estimate that we need at least 50% wildness of land distribution to have a healthy planet, which means we need to figure out how and where we are putting habitation, as well as its impact on the surrounding environment. Establishing circular green industrial zones and designing for communities have the meaning of creating well-being by changing the way we design cities or environments that are connected to the ground. Lastly, the notion of shelter as a foundational matter emphasises our humanity and the belonging of feeling safe, allowing more people to be more mobilized and shift toward a regenerative, sustainable society. Besides, the concept of community land trust also contributes to having new legal and financial structures that cities and governments can participate in.



DAY#10 THURSDAY, 11 NOVEMBER 2021

Session 1: Innovations in measuring biodiversity as Nature's carbon storage to inform future initiatives

Description In this session, panelists explored the key opportunities and challenges in developing innovations that measure biodiversity as nature's carbon storage mechanism to inform future initiatives. A key narrative throughout the session was that data, and evidence, is key to underpinning our confidence in nature-based solutions (NBS) and we need to turn data into knowledge and turn knowledge into action.

The session was preceded by a series of presentations, the first of which was from Dr. Justin Moat - Senior Research Leader at Royal Botanic Gardens Kew who illustrated the importance of monitoring afforestation and carbon sequestration and where we should be planting trees, based on factors including biodiversity. This was followed by a video message on space-based carbon and diversity monitoring in treescapes from Dr Antje Ahrends from the University of Edinburgh where they talked about how improved technology is going beyond mapping forests and carbon to biodiversity. Zeren Yang from the University of St Andrews presented how the normalized difference vegetation index (NDVI) is employed to identify vegetation cover changes to precise times to understand behaviors that cause degradation. Ximena Tagle from Wageningen University talked about how moving towards universal methodologies will facilitate greater data comparison and policy consequences. Dr Laura Suz from Kew Gardens presented a collaborative project run with Imperial College London about how the mechanisms underlying carbon sequestration in soil is largely unknown, but they have discovered that trees which harbor a diverse set of symbiotic fungi are healthier and store greater carbon. Now, they aim to transfer these methods to other ecosystems, to identify an integrated baseline we should protect. Professor Peter Kille from Cardiff University spoke about the role of soil invertebrates and micro-organisms in carbon cycling.

Nature-based solutions:

Nature is being undervalued and we must look to nature-based solutions to help us tackle the climate crisis. How can we drive new interventions to restore and protect nature? Earth observation is a small component of the global effort to tackle climate change, but it is necessary to baseline our understanding of now and forecast the future – so we know better how to mitigate. Technology is providing us with the ability to see and appreciate natural assets from a distance. For example, further technological uses for tree scanning could include looking into the DNA, comparing historical records, looking into soils in greater detail, or using tomography scanning. As trees that harbor a diverse set of symbiotic fungi are healthier and store greater carbon, we need to understand how to transfer these methods to other ecosystems, to identify an integrated baseline we

should protect. There is three times more carbon in the soil than in the atmosphere, thereby providing a very important carbon sink. More carbon is released into the atmosphere if subterranean ecosystems - essential to maintaining soil fertility, are impacted by changes to the canopy. To address this, mobile genomics is being used to characterize these subterranean ecosystems, however international collaboration is required. Technological innovations, such as imaging and miniaturization, are critical to this research.

Collaboration and integration:

The goal of collaboration and integration is to connect global data sets to make information into actionable insights and to connect diverse people around the world. Solving complex problems, such as the ecology crisis, demands collaboration and integration – across



disciplines and expertise. Local and global dynamics are increasingly overlapping and therefore interdisciplinarity and multisectoral global research networks for collaboration will be crucial. Technology is required to help facilitate and support this collaboration. It is also essential that the stakeholders are clearly and honestly presenting research findings that have been developed as part of an international collaboration. Empowering local communities is also a key part of this process, they are the direct protectors and users of these ecosystems.

Big Data:

Some of the speakers emphasized the importance of accurate data collection and analysis and how they connect sparse data sets and communities of people.

When discussing how to deal with such huge amounts of diverse information, Dr. Justin Moat commented on how we could leverage existing technologies networks i.e. Google and Facebook. The technologies that have been presented show how data collection has been revolutionized, particularly the miniaturization and portability of these technologies. In addition, technological innovation has drastically improved data collection on biodiversity and carbon sequestration. Collaboration between diverse expertise sectors and empowering communities is key to improving data collection and sharing, to effectively drive policy. Universal methodologies and automated processes are also needed to focus on key tasks. In addition, algorithm development to integrate a massive amount of data across different data platforms is essential.

Session 2: Innovative Enabling Climate Solutions Circular Economy, Innovative technology and Innovative financial instruments

Description In this session, panelists explored the key opportunities and challenges related to innovative ambitious climate solutions that meet human needs and examined the enablers which can meet these demands. The Innovation Hub has taken an approach to cluster several innovative solutions that go beyond technology and include an understanding of the financial needs - how finance can be mobilized to address and meet the demand and a variety of enablers within business, policy, leadership, and collaboration.

The panel was tasked with identifying potential match-making opportunities between the existing solutions and the demands that have been discussed during the event. All solutions should be scalable and replicable across many regions. Mike Hayes, Global Head of Climate Change and Decarbonization at KPMG discussed developing structured financial solutions and the challenge of mobilizing finance in innovation for sustainability. Pablo van der Lugt, Senior Lecturer from the Delft University of Technology – AMS Institute, presented on sustainable low carbon building and materialization focusing on circularity in the built environment and innovative bio-based materials. Next, Sophie Odupoy from KOKO networks presented the ethanol stoves project and how they achieved ethanol distribution using IoT technology. In addition, she explored the opportunity to develop

more innovative approaches and replicate this across different regions. Jacques de Vos - CEO Mezzanine Vodafone talked about agritech and the environmental opportunities in addition to the challenges that need to be overcome. Overall, the sessions covered: innovative financial instruments, fit for purpose solutions, digital solutions, mitigation actions, how to innovate on nature-based solutions (NBA) to get to Net Zero, and low carbon solutions towards a resilient future with the ability to adapt. Finally, Jelmer Hoogzaad, a climate change mitigation and circular economy expert from Shifting Paradigms explained how they help countries identify where are the opportunities to further raise the ambition of NDCs across the whole value chain from fuels to construction materials. Creating a network for innovators and shifting paradigms to moonshot thinking is what is needed for 2030.



Developing structured financial solutions

The challenge is to mobilize finance in the innovation for sustainability. This is due to the existence of a systemic gap in the market for risky tech investments. The goal is NET ZERO EQUITY, which is to raise money from 1 billion global citizens from a very small amount of money. We want to show in real-time the impact of their small environment through blockchain. A small amount of money invested can create big impacts, for instance in the global south. We need to consider how we redirect action for investments in global citizens. The challenge now is to go out and reach out to these small investors around the world.

IoT technology and innovative approaches

In countries such as Kenya where deforestation is high, charcoal for cooking purposes is a social and health risk, it appears affordable mostly because it is easily accessible. The rise of LPG is no longer sustainable and a solution independent of government subsidies is required. Ethanol can be the solution, it is not new but to address the safety risk, an affordable canister with a smart valve needed to be developed. By working with pre-existing infrastructure and developing partnerships, it was possible to create a smart depot system managed via the cloud including a KOKO cash point. This has been rolled out within Kenya and they have proven it can be scaled. They are aiming to roll out to 60 other countries which are heavily deforested but need to partner with governments who can offer incentives i.e. tax exemptions to ensure the price is not prohibitive to consumers.

Agritech

How can mobile technology allow industry stakeholders to support farmers accessing financial services? The aim is to create a digital platform that allows transactions for the farming industry and to enable farmers to make more informed decisions to acquire knowledge about climate

change and to enable them to participate in climate-smart activities. We should also develop index-based insurance products that allow farmers to access credit.

Circularity in the built environment and bio-based materials

Nature offers a far simpler way to eliminate CO₂ through the process of photosynthesis. Mass timber can replace concrete and steel in many applications with the same level of security. That would not represent a problem for deforestation either, because deforestation has nothing to do with timber use but is largely due to farming and cattle feeding. In Northern Europe, reforestation is growing, and the surface area is expanding every year: 10% of European gas emissions are mitigated by European forests. The forestry carbon bank and buildings are a second carbon bank and can store carbon. CO₂ storage is 5 times the CO₂ production for mass timber, whereas traditional building materials have higher emissions. In addition to that, timber mass can be reduced when no longer used for buildings.

Circular economy solutions

By visualizing all the material flows across a country, you can identify where material values are being lost and where the opportunities are to use circular economy solutions. It helps to ensure materials can serve a certain societal need i.e. shelter, mobility, nutrition and how to fulfil these needs through the most economic use of materials and the least amount of greenhouse gases emissions. This involves taking a design approach to a circular low carbon future and understanding how to re-engineer the value chain with smart solutions- must be cross-border approaches. The role of Article 6 is related to physical trade and carbon implications. Most promising new ventures often apply circular economy solutions. All the technology we need already exists and often only low-tech solutions are what is required, but creativity and cooperation are more important.



Session 3: Developing the Global Innovation Hub Platform and Assets

Description The Open Earth Foundation is a research and deployment non-profit, using cutting edge digital technologies and multi-stakeholder collaborations to advance open-source platforms that help increase planetary resilience. Martin Wainstein, Open Earth Foundation Founder and Executive Director, shared insights into how the GIH platform had been developed and the associated assets.

Virtual platform:

It was important to leverage the level of systems thinking for the virtual platform. We must think about what systems we need to transform and how to take a needs-based approach to solutions. Core human needs should be the pull factor for innovation. COP26 should help to define the UGIH platform vision so it can be built during 2022 and launched ahead of COP27. The focus is across 3 workstreams: the digital UGIH website which hosts project videos, documents, news, FAQs etc; a demo site, and a platform prototype. The demo site acts as a feasibility study to scope out the minimum engineering requirements and design of full dimension of the virtual hub and its functionalities, plus it will host the 4 core area questionnaires on access, shelter, create a challenge, and submit a solution. They demonstrated how they are engaging decentralized entities to interact as well as the levels of data protection. Finally, they showed the UGIH platform prototype with the landing page, how they would showcase COP 27, city pilots, active demands, news, partners, data integration, project information and approaches, registration and log-in process, plus user journey.

Session 4: Addressing the Climate Change Data Gap

Description In this session, Xiaochen Zhang, AWS; Sherry Madera, FoSDA and LSE; Ana Pinheiro Privette, Amazon Sustainability; Truman Semans, OS-Climate; and Martin Weinstein, Open Earth Foundation discuss data challenges, solutions, and accessibility of data when we transition from a sector-based approach to a need-based approach.

Data Challenges when dealing with overlapping areas:

Sherry Madera noted that when we deal with multiple areas like climate change, sustainability, ESG and SDGs, there tends to be a lot of overlaps. So, it is necessary to ask what data underpins each of these areas? That is the fundamental question that is not often asked, and leads to overlaps in datasets. There is also a distinction between data gaps and data holes. The former refers to insufficient or incomplete data and the latter refers to unavailable or missing data. Further, there needs to be a harmonized

understanding of historical, contemporary, and forward-looking data. The purpose and methodology associated with each are different and should be integrated in some sense. Lastly, the granularity of data is very important, and it is missing in most cases today where data points are vague and broad.

Challenges and solutions to data sharing:

Data solutions are needed when we think of any kind of governance or planning. For instance, if cities plan on providing need-based solutions, they



would need datasets on the core needs of the people. Martin Weinstein believes that when we imagine data, we should not think of it in isolation as raw data, but we should look at it in terms of an asset and the application of that data. An important data challenge is the sharing of it. Collaboration, cooperation, and access to data is the solution to this problem. Both, Martin Weinstein, and Truman Semans pointed out the tussle between transparency and privacy when it comes to data sharing. How do you ensure both transparency and privacy are satisfied? The solution is by holding onto the raw data and sharing and imagining data as assets according to Martin Weinstein. Truman Semans also pointed out that while thinking about need-based approaches, it is also important to think of the needs of solution developers and innovators in terms of the requirement for data.

Accessibility of data:

Database innovation is too expensive. Ana Pinheiro Privette noted that the process of getting data into a state where it can be converted to knowledge is a tedious task and takes 80% of the total effort. AWS is trying to create a cloud sharing structure for data where they work with organizations such as OS-Climate to recognize the required datasets and make them available on the Cloud to access. It can then be easily accessed by anyone. This is a foundational data challenge that needs to be solved. This will also be the solution to access to data for developing nations. Today, they are not able to engage in solutions because of a lack of infrastructure and data. Martin Weinstein then adds that spatialization of data is difficult and it can only be done with the help of integration of information. Truman Semans concludes by emphasizing that data on climate change should be treated as a free and public good. OS-Climate works toward democratizing the access of data.

Session 5: Climate Innovation for Central Banks and Supervisor

Description

This panel was moderated by Anastasia Raissis, Director of Global Cybersecurity and Regulatory Policy - Worldwide Public Sector at AWS. The panel consisted of Caio Fonseca Ferreira, Deputy Head of the Financial Supervision and Regulation division at IMF, Liam Maxwell, Director of Digital Transformation at AWS Worldwide Public Sector, Moles Fanjul Patricia from Banco de México, Benedicte Nolens from the BIS Innovation Hub and Andrea Oconitrillo Rojas, Climate Change Strategy Group, Banco Central de Costa Rica discuss climate innovation for central banks and the supervisor.

Financial Collaboration:

The challenges highlighted can be addressed much more effectively if we address them all together internationally. A global sustainability report can be a solution. One problem with green bonds is that they are considered green according to different taxonomies and these taxonomies are often not comparable. This confuses investors and breaks the flow of mitigation and adaptation projects. Collaboration with OCD is important but so is networking with different

jurisdictions, to come up with more broad standards. This is key to accelerating the green process. BIS has a collaboration about Green Finance with the Italian Presidency which was built during the G20. This was around tech challenges and three problem statements were highlighted: data collection, verification and sharing; analysis and assessment of transition of climate-related risks; and better connecting projects and initiatives.

Information is often very poor quality and not homogenous. The lack of national initiatives to



address this adds to the confusion. That is why it is important to have a global report on sustainability standards. Central banks have a mandate for stability and climate change is affecting this. Central Banks can lead the way to a more integrated and effective climate financial system, they should lead by example.

Challenges and opportunities to promote green finance:

Some of the challenges that we face today include acquiring a better understanding of climate-related financial risks and a common definition and taxonomy. Climate change is a major threat to the current financial system. Taking steps into sharing studies and publicly sharing data on climate change, and trying to cross information in terms of climate with variables that are more related to credit distribution so that the economics agency knows how to allocate resources better are key. Technology can be an opportunity to speed-up processes. Lack of disclosure, fragmented disclosure, problems with sustainability standards, risk of greenwashing, and the definition of taxonomy can be seen as an opportunity and a challenge that can help investors in countries to move into green technologies. Climate-related investments must move and change from 3-4 years terms into longer terms. Science must be translated into climate-related risk “terms” so that the finance system can address tasks based on that.

Decentralization and converting challenges to opportunities:

Innovators, private sectors, and NGOs are the “heart of possible”. Situational awareness is key to changing business models, and therefore a method of crunching a big amount of data, quickly, cheaply, and effectively is required. The private sector, NGOs and the public sector could work together to address the need to create a lot more awareness on the individual investors level. ‘Project genesis’ focuses on green bonds which will be approached worldwide, and they have to be available to retail investors. By fractionalizing green bonds into tokenization, they can make them in small investments amounts.

Technology:

There is a need to cross information of high-risk zones with variables related to production distribution so that the economic agency has a sense of how to best allocate resources. The use of technology is an opportunity when thinking about climate-related data. Volume, variety, and velocity are fundamental variables of how to use data. Central banks need to begin exploring unexplored territories to create real innovation and to do that we need to build capacity, accept failures, and start over again. Objectives are based on the idea of what is possible, not what is needed—technology innovation is needed but not enough.





Session 6: Reshaping fintech ecosystems for new climate business models to meet core needs

Description The panel focused on reshaping fintech ecosystems for new climate business models to meet core needs. The opening remarks were made by Project Executive UNFCCC Global Innovation Hub at UN Climate Change Secretariat: Massamba Thioye, and the session was moderated by Social Alpha Foundation Fellow and Open Earth Foundation Community Director: Katherine Foster. Aiase Mitha, Digital Ambassador at UNCDF talked about how we must work on how we design a fintech system to ensure it aligns with climate change needs and covered some of the key technologies in this space. HiveOnline's Sofie Blakstadt commented that one of the biggest risks for developing countries in implementing fintech is the exacerbation of the digital divide within that country. Mihai Hrimiuc from Carbon Base and Project ARK shared that the best approach is likely to be putting our effort into creating new models rather than making the existing models obsolete. Regarding blockchain, Teratree's Alex Gordon-Brander commented that at this stage it is considered one of the most unequal assets and therefore it is extremely important to find a way to ensure long-term distribution. Toni Caradanna from the Porini Foundation suggested the need for a green list that looks at biodiversity and climate change impact that can be managed by blockchain technology.

Aligning Fintech with climate change needs:

We must work on how we design a fintech system to ensure it aligns with climate change needs. Key technologies include e-commerce, mobile payment harnessing digital innovation to empower a million people to make green choices, build awareness, create narratives that resonates with people, and a user-centered experience on green action.

Addressing the digital divide:

One of the biggest risks for developing countries in implementing fintech is the exacerbation of the digital divide within that country. The border nature of the regulation needs to be changed. We must turn the system of microfinance on its head: we do not charge the farmers but the lenders or the insurers,

and convince them that they can make money out of farming communities without taking money out of farmers. There are ways to make money out of farming communities without making money out of farmers. Digitizing natural and social capital is the way to go to build more sustainable communities.

Blockchain applications:

It is possible with technology to create a bottom-up impact on markets. We need a green list that looks at biodiversity and climate change impact and we can put it on a blockchain to create impact directly. Mobile phones are the gateway to create change: there are more people with access to a mobile phone than a toilet. The third wave of digitalization is the use of blockchain to create an impact, not necessarily money.



Session 7: Culture and Communication as Enablers for 1.5C

Description This session is a dinner workshop demonstrating innovative ideas for enabling a 1.5C future through dynamic, systemic change, taking us out of our linear approach of small incremental action with a reliance on future CCS that does not provide action on other areas including poverty and biodiversity loss. In other words, actions that avoid emissions, rather than reducing them.

James Arbib, Rethink:

We're at the bottom of the S curve in terms of disruptive technologies, a virtuous cycle will soon rapidly accelerate this as costs come down and consumer demand increases, particularly in the key sectors of energy, transport, and food. This acceleration requires enabling stakeholders such as markets, not to push the boulder up the hill, but push it down. In sum, James advocates for a transition from the current extractive global system to one of creation and regeneration.

Dennis Pamlin:

Dennis argues the current messaging of climate change is predominantly statistical, but we need other forms, such as emotion to allow people to personally connect to what can seem an abstract issue. He gives the example of Virpi Pahkinen's video and how her dancing inspires him and others to make positive change. Music and TV companies are also key components of making these personal connections. Dennis argues that climate journalists are an issue too, as it's all about what's your emissions, not what are you doing to provide solutions to human needs. We need to learn and be inspired by new heroes; the media focuses on protests and polluters, but what about scientists, designers, artists?

Music and global sustainability:

Hanna Grahm, Sustainability Lead, Spotify, Ebba Grythberg, Global Sustainability Manager, Spotify, and Tobias Engström, CEO & Co-founder, Klevgrand: There is still room for educating people, but we know the facts, we need to make people feel things to inspire action, which is done through art. Going forward

Spotify is looking to connect climate change education whilst listening to certain songs. Furthermore, they argue not just investors, but consultants need to integrate this solutions-based agenda into their work, including extensively measuring impact, which helps to add value to a business, all of which will ultimately influence CFOs and CEOs most.

Movies and global sustainability:

Emma Stewart, Sustainability Officer, Netflix: 3 in 5 consumers surveyed are interested in work that shows the climate issue, which does not just include natural history documentaries. Netflix is aiming to provide more of this, such as films in the Together for Our Planet collection and mentions of green issues in other films and series too. All of this is to inspire people to take action. Like the representatives from Spotify, Emma calls for greater data and studies about providing climate solutions, in a similar way emissions reductions are reported through rating agencies like CDP, to catalyze greater action.

Regenerative lifestyles and empowerment of citizens:

The role of outdoor living, Eva Karlsson, CEO, Houdini: Eva sees a global mind-shift necessary, to embrace complexity and be an explorer, rather than being narrow-minded. Technology is what people focus on, which is important, but only by moving beyond this focus, to culture and nature, can we shift mindsets. Houdini is a Swedish circular outdoor brand, sustainable not just in how the product is designed, but ensuring the total volume produced and the lifestyles promoted are also sustainable. This includes moving away from promoting constant seasonal fashion change.



**Guiding and supporting companies and organizations to become solution providers Marco Duso, Principle, BCG
and Johan Falk, Lead author, 1.5 °C Business Playbook:**

Marco agrees that culture is an opportunity to be left out in terms of moving to a framework of avoided emissions, not emissions reductions as many companies do. BCG's Grow Green Ventures initiative aims to facilitate this, in terms of avoiding emissions of your product or service, but also the customer. Marco also agreed that going forward, this initiative needs to work on how to measure impact, much like how Emma and Hanna mentioned. Johan reiterated the need for this, in ensuring every company integrates nature and climate into their targets. We need to facilitate a race to the top, particularly in terms of shifting overly consumptive lifestyles.

DAY#11 FRIDAY, 12 NOVEMBER 2021

Session 1: Innovations in measuring biodiversity as Nature's carbon storage to inform future initiatives

Description This closing session featured focused reporting on core-topic discussions by core partners: Climate KIC, Open Earth Foundation, and Mission Innovation Rise. The partners reflected on the key messages received during the 70+ sessions.

Tangible Results:

Taking principles of systems thinking, collaboration and moonshot thinking and making them tangible will be crucial to the success of the Hub going forward.

Institutional Change:

Moving forward, the plan is to use the UNFCCC Global Innovation Hub as a catalyst for institutional transformation. Identifying how we can leverage this kind of global initiative to create a different quality of conversations in institutions – financial, political, social, economic – is a key goal of the Hub.

Role of the Global South:

Panelists mentioned that thus far, the discussion of climate solutions hasn't represented a truly human population. In order to create solutions for a 11B



world, we need to listen to as many diverse voices as possible. Bringing in innovators from sites of climate solutions in the Global South will be transformative; this needs to be a truly global convergence of ideas.



KEY HIGHLIGHTS FROM FOCUSED REPORTING

Massamba Thioye UNFCCC:

Reflected on the three UN Climate Change Global Innovation Hub COP26 physical Hub objectives which were accomplished. At this COP26, the team launched the digital UNFCCC Global Innovation Hub, hosted 70+ sessions with 325 different speakers, with a viewership of 20000+ online, incorporated international perspectives from over 35 countries and 179+ organizations, and have already seen an increasing awareness of the UNFCCC Global Innovation Hub in online and personal spaces. Massamba noted that the UIGH can be propelled to create change spoken throughout the sessions with a continued commitment to and support for UGIH and building on the common ground shared by all partners.

Reporting on digital for climate topic, Massamba explained the importance of digital technology in the fight against climate change. Our capacity to enact real change and see real results using digital technology is powerful. The types of transformative climate action needed cannot be implemented without the support of digital technology. It provides a powerful resource to connect solution providers and enablers across the globe by creating online collaboration spaces and sustainable communication systems. Harnessing digital technology allows us to match, support, fund and innovate the change needed. By using data, AI, machine learning, new VRE initiatives, sustainable finance, and so much more digital technology, we can enable transformative change.

Kirsten Dunlop, CEO, Climate-KIC:

Reporting on cities, Dunlop began by expressing that to address climate change at the scale and pace we need to move away from linear planning to create a space of possibility and one that is as unique as the challenge we face. There is a need for a new design for life. Climate change is not simply a question of policy commitments, but a fight that requires a rethinking of how we live, and cities are a platform for this rethinking. COP26 saw many cities discuss their methods of sustainable transformation including the employment of renewable energy, digital solutions, and nature-based solutions. Dunlop went on to speak about social and community engagement in these cities. With a growing

change of voice in local leadership, cities need to act as a site for the interaction and dynamism of climate solutions. Cities can be the site of profound and broad change from policy to renewable energy solutions

Digital Finance presented by Martin Wainstein, Executive Director, Open Earth Foundation: Wainstein stressed the need for collaboration. The UN Climate Change Global Innovation Hub provides a powerful platform on which collaboration can take place. He further emphasized the importance of digital finance noting how it can be an enabler for innovation for the Innovation Hub. There is a demand for solutions and there are solution providers. Digital finance is crucial for linking the two.

Dennis Pamlin, Mission Innovation / RISE:

Noted that going forward, there is a need for transformative and concrete discussions in settings like COP26. He called for action and innovation and stressed the importance of enabling solution-providers and accelerators who will act with urgency.

Carlos Ruiz-Garvia, UNFCCC:

Reported on the project's next steps and highlighted some of COP 27 activities. The products will consist of physical and virtual hubs, an innovation framework, and a stakeholder network, as well as the establishment of working groups, and an advisory committee.

PLANNED COP27 ACTIVITIES

- **Partnerships and fundraising**
- **Physical pavilion**
- **Event planning**
- **Website / virtual collaboration platform v1.0**
- **Communications:** getting people engaged, collaborating as well as communicating what the UGIH is doing and solutions that are being created.
- **Development of the database of demand for solutions.**
- **Establishment of advisory committee and working groups**





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