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COP29: Global Progress Towards Accelerating Sustainable Development & Climate Action with Technological Innovation

Centre for Environmental Policy

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Marta Koch, PhD Candidate at the Centre for Environmental Policy (CEP), reflects on her experience as a UK Youth Delegate at COP29 in Baku, Azerbaijan, exploring how technological innovation is shaping climate action and progress towards the UN Sustainable Development Goals.

As a PhD candidate at Imperial College London with research focused on UN Sustainable Development Goal (UN SDG) progress and exploring how technological innovation enables unilateral and multilateral climate action, attending this year's Conference of the Parties of the UNFCCC as a UK Youth Delegate as part of the Future Leaders Network has been a particular highlight at the beginning of my PhD journey.

COP29 just ended in Baku, Azerbaijan, on 24th November 2024, having overrun by two days. The stalling of talks over climate finance commitments served as a true test for the multilateral climate system and highlighted divides between wealthy, developed nations and developing nations bearing the brunt of global climate change impacts.

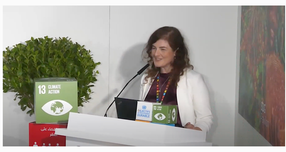
As COP29 President HE Mukhtar Babayev noted in his opening speech, this COP was seen as the moment of truth for the Paris Agreement and commitments to limit the global average temperature increase to 1.5°C above pre-industrial levels, as adopted by 196 countries at COP21 in Paris in 2015. The draft decision document on the $200 billion per year and scaling up to $1.3 trillion per year targets by 2035 new collective quantified goal (NCQG) on climate finance for developing countries was published on the last day of COP29 and explicitly refers to the importance of technology development for supporting "just transitions across all sectors and thematic areas, and cross-cutting efforts" as per the latest Assessment Report of the Intergovernmental Panel on Climate Change (IPCC). Likewise, regarding the inclusion of technological innovation in specific industries, COP29 Sharm el-Sheikh mitigation ambition and implementation work programme and UAE dialogue on implementing the global stocktake outcome documents note the potential of "electrification and switching to clean and low-emission technologies" in cities and urban systems and collaboration on technology transfer for "halting and reversing deforestation and forest degradation by 2030 in the context of sustainable development and poverty eradication."

Beyond current debates over the success of the climate finance and global stocktake (GST) negotiations, it is worth noting that COP29 made strides in emphasising that, in addition to finance, technologies can act as great enablers for speeding up climate action and ensure we are leaving "no one behind" when climate-friendly technological solutions are made accessible to all in progressing towards the 2030 Global Goals.

COP29 events highlighted the latest innovations in technology tools for climate action and sustainable development, especially digitalisation, artificial intelligence (AI), big data and green fintech solutions, alongside the urgent need for the technology sector itself to become greener through the increasing use of sustainable data centres, standardisation improvements and GHG emissions reductions.

This year was also pivotal because 16 November was designated as the first Digitalisation Day at a COP by the COP29 Presidency, International Telecommunication Union (ITU), UNFCCC Technology Executive Committee (TEC) and others, building on the groundwork laid at COP28 by ITU and over 40 organisations. As emphasised by ITU Secretary-General Doreen Bogdan-Martin during the launch, "we can and must reduce the environmental footprint of digital technologies while leveraging their undeniable potential to tackle the climate crisis."

Events Highlighting Key Emerging Technologies



Multiple events at COP29 directly addressed technological innovation in support of climate change mitigation (SDG 13 on climate action) and the other UN SDGs. Highlights included:

SDG 2: Zero Hunger

The COP29 Presidency and UN Food and Agriculture Organization (FAO) launched the 'Baku Harmoniya Climate Initiative for Farmers' (19 Nov) to foster climate-smart agriculture collaborations concentrated on the agriculture, food and water nexus.

SDG 7: Affordable and Clean Energy

'Decarbonising Transport: Policies and Strategies For Aviation, Maritime and Land' with the International Maritime Organization (IMO), International Civil Aviation Organization (ICAO) and UN Economic Commission for Europe (UNECE) (20 Nov) focused on low and zero carbon fuel and energy supply systems across transport industries.

SDG 8: Decent Work and Economic Growth

'Digitalisation of Banking and Support of Greentech for a Sustainable Future' (16 Nov) led by Bank ABB showcased tools like the ABB Biz app to help Micro-, Small and Medium-Sized Enterprises (MSMEs) adopt greener business practices.

SDG 9: Industry, Innovation and Infrastructure

'AI and Emerging Technologies – Empowering a Sustainable Future Through Innovation' (16 Nov) led by Azersun and FABA International, introduced platforms like 'Eco19 for Individual' and 'Eco19 for Enterprise' to optimise resources and promote circular economies.

SDG 10: Reduced Inequalities

COP29 Presidency and ITU's **'Green Digital Action Declaration'** (16 Nov) committed to expanding digital access for Least Developed Countries (LDCs) and Small Island Developing States (SIDS) as well as Indigenous Peoples, local communities, women, children, youth and those with disabilities.

SDG 11: Sustainable Cities and Communities

UN Industrial Development Organization's (UNIDO) **'Smart Cities for a Resilient Tomorrow'** (20 Nov) explored IoT and AI-based solutions such as smart grids for developing energy-efficient urban environments and city planning.

SDG 12: Responsible Consumption and Production

'Closing the Loop: Transforming AI into a Green Force' (16 Nov) with ITU, Google and the World Bank, addressed e-waste reduction and sustainable computing infrastructures in the ICT sector.

SDG 14: Life Below Water

'Reclaiming Lost Waters: Digital Solutions for a Sustainable Future' (19 Nov) organised by UNIDO focused on restoring aquatic ecosystems and preserving biodiversity in the Aral Sea region using GIS, drones and satellite imagery.

SDG 15: Life on Land

The high-level event on **'Strengthening Climate Information and Multi-Hazard Early Warning Systems for Increased Resilience'** (16 Nov) hosted by Azerbaijan's Ministry of Ecology and Natural Resources, World Meteorological Organization (WMO) and UN Office for Disaster Risk Reduction (UNDRR) highlighted early warning systems to mitigate land degradation under the UN's EW4All initiative.

SDG 17: Partnerships for the Goals

'World Standards Cooperation: Bridging the Digital Divide with Standards for Sustainability' (15 Nov) led by World Standards Cooperation partners (International Organization for Standardization (ISO), International Electrotechnical Commission (IEC) and ITU) showcased how international standards in data-sharing can drive access to sustainable technologies and accountability globally.

Key Takeaways for Future Policymaking

COP29, as a high-profile, global event involving over 55,000 participants from 200 countries and hundreds of Blue and Green Zone events, successfully demonstrated how the latest technological innovations in digitalisation, artificial intelligence (AI), Internet of Things (IoT), big data, energy-efficiency and fintech can have a transformative impact on how governments, industry and individuals can engage with accelerated and inclusive innovation for climate mitigation and tackling the digital divide in line with the UN SDGs. It called attention to the huge potential of technology to act as a great equaliser, bridging the gaps between developed and developing nations, as well as represented and underrepresented communities, by providing access to tools, knowledge and solutions essential for addressing climate change and sustainable development as major global challenges of the 21st century.

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