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"Harnessing Artificial Intelligence for Sustainable Development Goals (SDGs)" Panel 2: Real-Life Examples of AI Contribution to the SDGs."

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AI's potential to support the SDGs is vast and varied. The United Nations Environment Programme has identified five key domains where AI's impact is useful to enable the addressing of SDGs 6, 8, 12, 13, 14 and 15.

First, SDG 8.4 and SDG 12 - Supporting Resource Efficiency, Substitution, Circular Practice and Pollution Reduction

Unsustainable consumption and production of energy, materials and natural resources drives the triple planetary crises. SDG 8.4 and SDG 12 are key to address the drivers of climate change, biodiversity loss and pollution. AI contributes to the efficiency, optimization, and substitution of natural resources in products and their supply chains.

- **In agriculture:** AI-driven technologies optimize water, fertilizer and pesticide usage in agriculture, and maximize efficiency in renewable energy production.
- **In Smart buildings and even homes** equipped with AI-powered smart devices are revolutionizing energy consumption. These smart devices learn from our habits to optimize heating, lighting, and energy use, significantly reducing the carbon footprint of homes and buildings.
- **In minimizing pollution and targeting hotspots by pinpointing sources** and suggesting actionable solutions, thereby preserving our planet's health. An illustration is the **Sustainable Consumption and Production Hotspot Analysis Tool (SCP-HAT)**, a collaborative effort between the Life Cycle Initiative, the One Planet Network, and the International Resource Panel, in partnership with the University of Vienna of Economics and Business, CSIRO, and the University of Sydney. This tool is exploring how to harness the power of AI to trace

environmental pressures and impacts throughout the supply chain of goods and services within a specific country and aids in prioritizing national policies and transition plans.

Second, AI is starting to enable a circular economy.

- **Through tracking and tracing products throughout their lifecycle**, AI supports recycling processes, reduces waste, and encourages the reuse of materials. The **digital product passport, powered by AI** is an innovative application provides detailed information about the materials and processes involved in the manufacture of products. By making this data accessible, it not only ensures better recycling practices but also enables consumers to make informed choices, fostering a more sustainable consumption pattern.

Third, through Empowering Green Consumer Behaviors and Lifestyles and Supporting the achievement of SDG 12.8

- **Choosing right:** According to one study, although 69% of respondents were concerned about sustainability when it came to buying groceries, only 7% were actually buying sustainable products. That's where AI steps in. Through apps and platforms that analyze personal consumption patterns, or through recommendation engines, smart filters and gamification, AI can inform individuals about their environmental impact, suggesting modifications and encouraging sustainable purchases. In this regard, AI recommendation engines can help consumers compare and select products with the lowest climate footprint – and help optimize transport **and delivery**.
- **Providing sustainability information to consumers on e-commerce platforms.** One product UNEP released was **Guidelines for Providing Product Sustainability Information in E-Commerce**, ten principles on how e-commerce platforms can communicate product sustainability information and encourage conscious decisions based on reliable claims.

Fourth, AI excels in environmental monitoring and risk prediction, which enables early warning systems for environmental crises. SDG 6.6.1; SDG 13, 14 and 15

- **Predict natural disasters, track biodiversity loss, and monitor climate change impacts** Through advanced algorithms and satellite imagery, AI systems can in real-time and at a global scale.
- A prime example is the **International Methane Emissions Observatory** hosted by UNEP, which employs AI to detect significant methane emission hotspots.
- Additionally, in support of the **SDG 6.6.1 Global Freshwater Ecosystems Explorer**, uses AI to monitor changes in global surface water from satellite images. This tool is vital for helping countries report progress on SDG indicator 6.6.1, enhancing our understanding and management of freshwater resources.
- **The Flood and Drought Portal** developed by the UNEP-DHI Centre in Denmark, aggregates and translates publicly available data from a range of sources, making it accessible to water authorities and helps them to mitigate water-related disasters.

Fifth, Bridging Environmental Science, Policy, Action and Innovation and democratizing access to environmental science

- UNEP is currently testing a dedicated large-language model which learns from authoritative and validated sources of environmental science as the basis for making policy recommendations.

In conclusion, as we harness AI's capabilities to address the environmental challenges of our time, we must also guide its development with careful governance and ethical frameworks to ensure it is unbiased and benefits all.

In particular, we also need to minimize the environmental impacts of AI itself in terms of energy, water and minerals consumption, and the production of emissions and e-waste.

We need to prevent AI models from being trained on poor quality climate data, misinformation and fake news.

I would like to close by emphasizing how important the Global Digital Compact could be to address these questions and to provide a north star for how AI could contribute to sustainability action but also be sustainable in itself.