ARTIFICIAL INTELLIGENCE: THE POTENTIAL FOR GOOD

2030VISION

Global Goals Technology Forum

THE GLOBAL GOALS
For Sustainable Development

Artificial intelligence provides an opportunity to solve some of the world's greatest challenges, including the United Nations Sustainable Development Goals.

Artificial Intelligence (AI) extends and amplifies our capacity to understand and solve complex, dynamic, and interconnected global challenges such as the United Nations (UN) Sustainable Development Goals (SDGs). The capabilities of AI – including automating routine tasks, analyzing big data, and bringing intelligence and learning to various processes – have enormous potential to address a wide range of sustainable development issues.

With **10 years remaining** to achieve the ambitions outlined in the SDGs, we must strengthen and quicken the pace of our efforts. AI – if well designed and directed – can play a transformative role in helping us achieve the SDGs.

THE UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS

In 2015, 193 countries agreed to the UN 2030 Agenda for Sustainable Development, which provides a shared blueprint for peace and prosperity for people and the planet, now and into the future. At its heart are the 17 SDGs. These represent an urgent call for action by both developed and developing countries in a global partnership. These countries recognize that ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, reduce inequality, and spur economic growth – all while tackling climate change and working to preserve our water- and land-based ecosystems.

AI is evolving rapidly and has incomparable potential for social good provided we work to ensure that such a transformative technology benefits humanity as a whole. It is essential we develop AI technology safely and inclusively, and ensure equitable access to its benefits.

ABOUT 2030VISION AND THIS PAPER

Founded in 2017 by Arm, 2030Vision is a partnership of businesses, NGOs, and academia that aims to transform the use of technology to support the delivery of the UN SDGs. 2030Vision serves as a platform to convene cross-sector leaders to raise awareness of the SDGs, to showcase thought-leadership on the role of technology in addressing the SDGs, and to stimulate partnerships for action.

2030Vision is pleased to present a new paper in which we landscape the state of AI and the SDGs. The paper shares perspectives on how AI is being deployed for positive impact across the SDGs and identifies what more is needed. The following pages provide a short summary of the full paper.

READ THE FULL PAPER AT:
2030vision.com/state-of-play

AI & THE SDGS: THE STATE OF PLAY

In its most recent progress report on the SDGs, the UN cited success in some areas, for example:

GOAL 1: NO POVERTY

Since 1990, the percentage of people living in extreme poverty (living on less than $1.90 per day) has declined from

33% TO 9%

GOAL 3: GOOD HEALTH AND WELL-BEING

Since 2000, maternal mortality has declined by

↓37%

and under 5 mortality has declined by

↓47%

GOAL 7: AFFORDABLE AND CLEAN ENERGY

87%

of the global population has access to electricity, up from 78% in 2000.

However, progress has been insufficient in other areas, for example:

GOAL 4: QUALITY EDUCATION

617m

children of primary and secondary school age do not meet minimum proficiency in mathematics and reading.
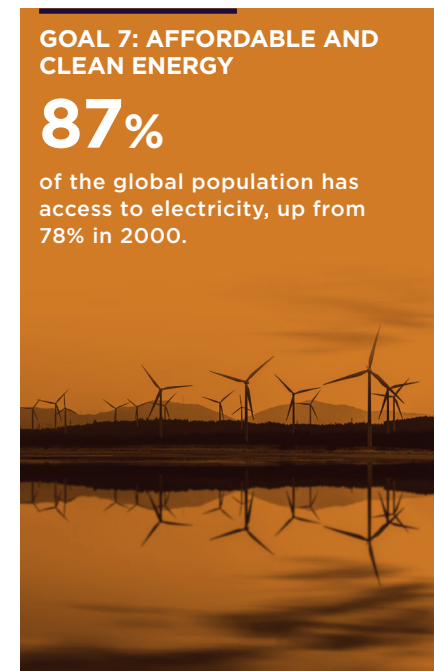
GOAL 5: GENDER EQUALITY

Globally, women represent just

23% OF SEATS

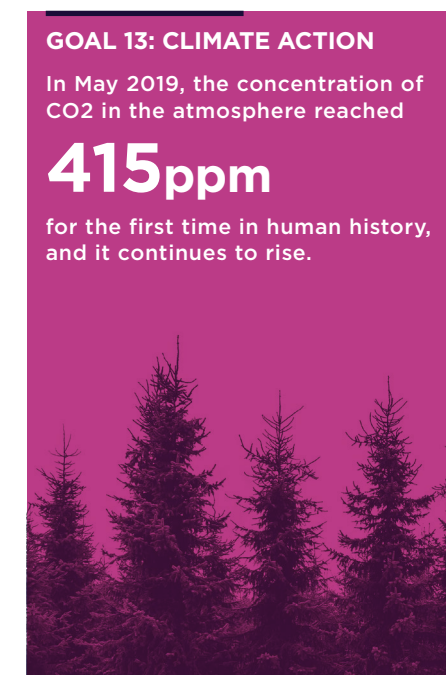in single or lower houses of national parliaments.

GOAL 13: CLIMATE ACTION

In May 2019, the concentration of CO2 in the atmosphere reached

415ppm

for the first time in human history, and it continues to rise.

"WE ARE AT A PIVOTAL MOMENT. AS ARTIFICIAL INTELLIGENCE BECOMES MORE WIDELY ADOPTED, WE HAVE A TREMENDOUS OPPORTUNITY TO RE-EVALUATE WHAT WE'VE CREATED AND ENSURE THAT AI IS DEVELOPED AND APPLIED TO THE UN SUSTAINABLE DEVELOPMENT GOALS TO ACHIEVE A BETTER AND MORE SUSTAINABLE FUTURE FOR ALL. THIS WILL REQUIRE AN EXTRAORDINARY AND COLLABORATIVE EFFORT FROM A WIDE RANGE OF STAKEHOLDERS."

Tabitha Goldstaub

Co-Founder at CognitionX & Chair of the UK Government's AI Council

AI: A TRANSFORMATIVE FORCE FOR ACHIEVING THE SDGS

The risks and consequences of AI are much in discussion in the public domain.

AI raises complex questions about privacy and trust, and poses other challenges, from job displacement and potential bias in algorithms to autonomous weapons and social manipulation. While such concerns are valid and must be addressed, this must be balanced with the enormous potential of AI to achieve the SDGs.

AI is currently being used to better understand the drivers and impacts of issues such as climate change, drought, and human migration. It is being used to bring greater efficiency and effectiveness to sectors such as education, healthcare, and transportation. AI allows us to do things not previously considered possible.

We need the full power of AI to achieve the ambitious targets in the SDGs.

"...CLIMATE CHANGE IS A MASSIVE PROBLEM ACROSS NEARLY EVERY SECTOR AND MEASURE OF HUMAN DEVELOPMENT. TO ADDRESS IT AT THE SPEED AND SCALE THAT CURRENT CONDITIONS REQUIRE, WE'LL NEED TO TAKE A MORE DATA-DRIVEN APPROACH – ONE THAT HARNESSES THE FULL POWER OF ARTIFICIAL INTELLIGENCE AND OTHER ADVANCED TECHNOLOGIES TO ACCELERATE DISCOVERY AND INNOVATION AT A TRULY PLANETARY SCALE."

Lucas Joppa

Chief Environmental Scientist, Microsoft

ILLUSTRATING THE POTENTIAL OF AI AND THE SDGS

ZERO HUNGER

20% to 40% of crop yields are destroyed each year by pests and disease, and this is predicted to worsen due to climate change.

AI is being used to combat this, with large companies (e.g. IBM), smaller companies (e.g. Farmwave), and others (e.g. PlantVillage) offering solutions that reduce crop loss and improve profitability for farmers around the world.

2 ZERO HUNGER

GOOD HEALTH AND WELL-BEING

AI is being used to improve the diagnosis and treatment of diseases.

For example, IBM and New York University published a paper on how AI can be used to detect glaucoma, the second leading cause of blindness in the world. Google and several medical institutions have published research on how AI is as good or better than doctors in detecting lung cancer from CT scans.

3 GOOD HEALTH AND WELL-BEING

LIFE ON LAND

Illegal and unsustainable wildlife trade is a threat to the existence of certain species and human livelihoods – estimated to be worth $8 billion to $10 billion per year.

AI is being deployed to better inventory wildlife (e.g. Wildbook efficiently identifies individual animals by their unique features) and combat poaching (e.g. RESOLVE is using AI-equipped cameras to alert rangers to any human interference with wildlife in near real-time).

15 LIFE ON LAND

The common thread across these examples is that AI brings new capabilities and efficiencies to address complex global challenges.

We must now work together to accelerate and scale the development and use of AI. Guided by the SDGs, it is now up to all of us – businesses, governments, academia, multilateral institutions, NGOs, and others – to ensure we use all the latest tools at our disposal to build a better future for everyone.

MAXIMIZING THE POTENTIAL OF AI FOR THE SDGS

Given the ambition, complexity, and urgency of the SDGs, we need unprecedented collaboration and action from businesses, governments, academia, multilateral institutions, NGOs, and others to engage more with these challenges to deliver the world we want by 2030.

In itself, AI is a neutral tool that reflects the intentions, experiences, and biases of the people who design and use it. Given the moral and commercial imperative, the SDGs must be central to how AI is designed from the start. Each stakeholder group brings unique perspectives and capabilities to this collaboration.

"WHAT'S CLEAR IS THAT NO ONE NATION, NO ONE ORGANIZATION, NO ONE COMPANY, AND NO ONE COMMUNITY CAN MEET THESE CHALLENGES ALONE. THE PATH TO A TRANSFORMATIVE BUT ALSO A SAFE, TRUSTED AND INCLUSIVE AI WILL REQUIRE UNPRECEDENTED COLLABORATION BETWEEN GOVERNMENT, INDUSTRY, ACADEMIA AND CIVIL SOCIETY."

Houlin Zhao

Secretary-General of International Telecommunications Union (ITU)

BUSINESSES, AND OTHER DEVELOPERS AND USERS

Although a growing number of companies have committed to addressing the SDGs, few to date are comprehensively looking across the SDGs to determine how AI can help advance progress towards them.

Businesses and other organizations **using** AI must engage more in multi-stakeholder efforts to identify opportunities to use AI to address the SDGs.

Meanwhile, organisations **developing** AI solutions should use the SDGs as a filter for assessing the potential benefits and risks of AI applications – and strive to amplify the benefits (e.g. improving renewable energy systems) and minimize the risks (e.g. burning more fossil fuels). Organisations developing AI should also consider how models can be applied to different contexts (e.g. less developed nations) or challenges (e.g. applying pre-trained AI models to new data sets). These efforts would help stakeholders with a good understanding of particular issues but with access to fewer resources (e.g. NGOs) ensure that the benefits of AI are more equitably shared.

ACADEMIA

Given the wide-ranging nature of the SDGs, academic institutions are well placed to bring researchers from across disciplines to explore how AI can be used to address the SDGs, and the interconnections across them.

Universities could also play a critical role in educating future generations of AI developers and users. Integrating the SDGs into curricula could shape how well the SDGs are addressed by AI as it evolves. Academia may also have the ability to explore AI use cases that are further out in time, or that are less commercial in nature.

MULTILATERAL INSTITUTIONS

Organizations such as the UN, the Organisation for Economic Co-operation and Development (OECD), and development banks can play a unique role given their institutional missions that address SDG-related topics and their frequent access to data on sustainable development issues.

Such organizations may be well placed to be central repositories for the SDG-related data that AI developers and users need.

GOVERNMENTS AND POLICY MAKERS

For AI to be trusted by the public, and to help scale efforts for achieving the SDGs, governments must set the right policies for AI's accepted development and use.

Tools such as image recognition can advance progress towards the SDGs (e.g. Goal 2 Zero Hunger, by improving food security) and impede it (e.g. discriminating against certain demographics). They can also help set rules around data governance (e.g. ownership and access). Lastly, national governments are the signatories to the SDGs, and some have developed national AI strategies. The SDGs should be explicitly addressed in such strategies.

2030VISION

CognitionX

WE WILL NEED
UNPRECEDENTED
COLLABORATION TO
LEVERAGE THE POWER
OF AI TO HELP ACHIEVE
THE SDGS. 2030VISION
IS PLEASED TO SHARE
OUR NEW PAPER AS A
MEANS TO HIGHLIGHT
THE IMPERATIVES AND
OPPORTUNITIES FOR AI
TO SUPPORT A MORE
PROSPEROUS AND
SUSTAINABLE FUTURE.

READ THE FULL PAPER AT:
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