

Sustainable Development Ghosts (SDGs)

Half time towards 2030: Challenges and Opportunities

17 June 2025

التحديات والفرص: ندوة أشباح التنمية المستدامة
2030منتصف الطريق إلى

Fouad Mrad, PhD

Reference: “Sustainable Development Ghosts at the 4Th Industrial Age” Penguin Author house, March 2025, (available on Amazon)



SOCIAL GROUP



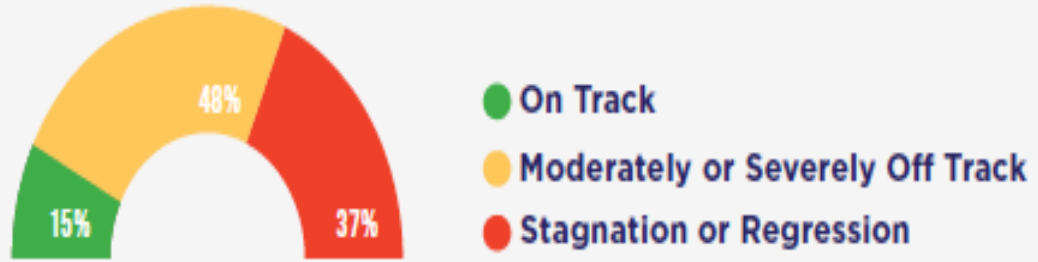
ECONOMIC GROUP



ENVIRONMENTAL GROUP



A concerning picture of SDG progress at the midpoint:



Why:
“Ctrl + Alt + Delete”

What haunts our progress?
What illuminates our future?

This Seminar

- IS: reflections, critical opinions, realistic hope, call for change.
- NOT: UN reform blueprint, peer-reviewed study, silver-bullet solutions.

The Global Context

"A world shaped by ambition and lessons learned"

- The Millennium Development Goals **(MDGs)* (2000–2015)**.
- The Sustainable Development Goals **(SDGs)* (2015–2030)**.

PAST MDGs Successes

- Extreme poverty: 1.9 billion in 1990 to 836 million by 2015
- Reducing child mortality rates by over 50%.
- Maternal mortality dropped by 45%
- Safe water: 147 countries met target
- Aid flows: + 66 %

PAST MDGs Poor Performance

- Regional inequalities
- Vulnerable groups left behind (e.g., gender, age, ethnicity, geography).
- Inadequate financing and systemic barriers.

Transitioning to the SDGs: 2015

From 8 goals to 17:

A comprehensive vision for humanity

Social, Economic, & Environmental
dimensions (NEXUS)

Importance of global collaboration
and learning from the past.

The “Ghosts” of Sustainable Development

Feature 1 – Unrealistic ambitions

Feature 2 – Measurement maze diverts resources

Feature 3 – Hidden complexities ignored

Why they matter:

These ghosts impede progress

Choice:

Confront OR they haunt future generations.



UN Secretary General progress report in April 2023:

“We are leaving more than half the world behind and just **12 percent** of the Sustainable Development Goal targets are on track.

Hunger is back at 2005 levels, and Gender equality is some 300 years away.

Worst of all, we have stalled or gone into reverse on more than 30 percent of the SDGs.”

THE NAKED TRUTH

Implementation \neq Adoption

Requires: political will, long-term funding, programs, PEACE.

Elephant in the room: conflicts & wars derail everything.

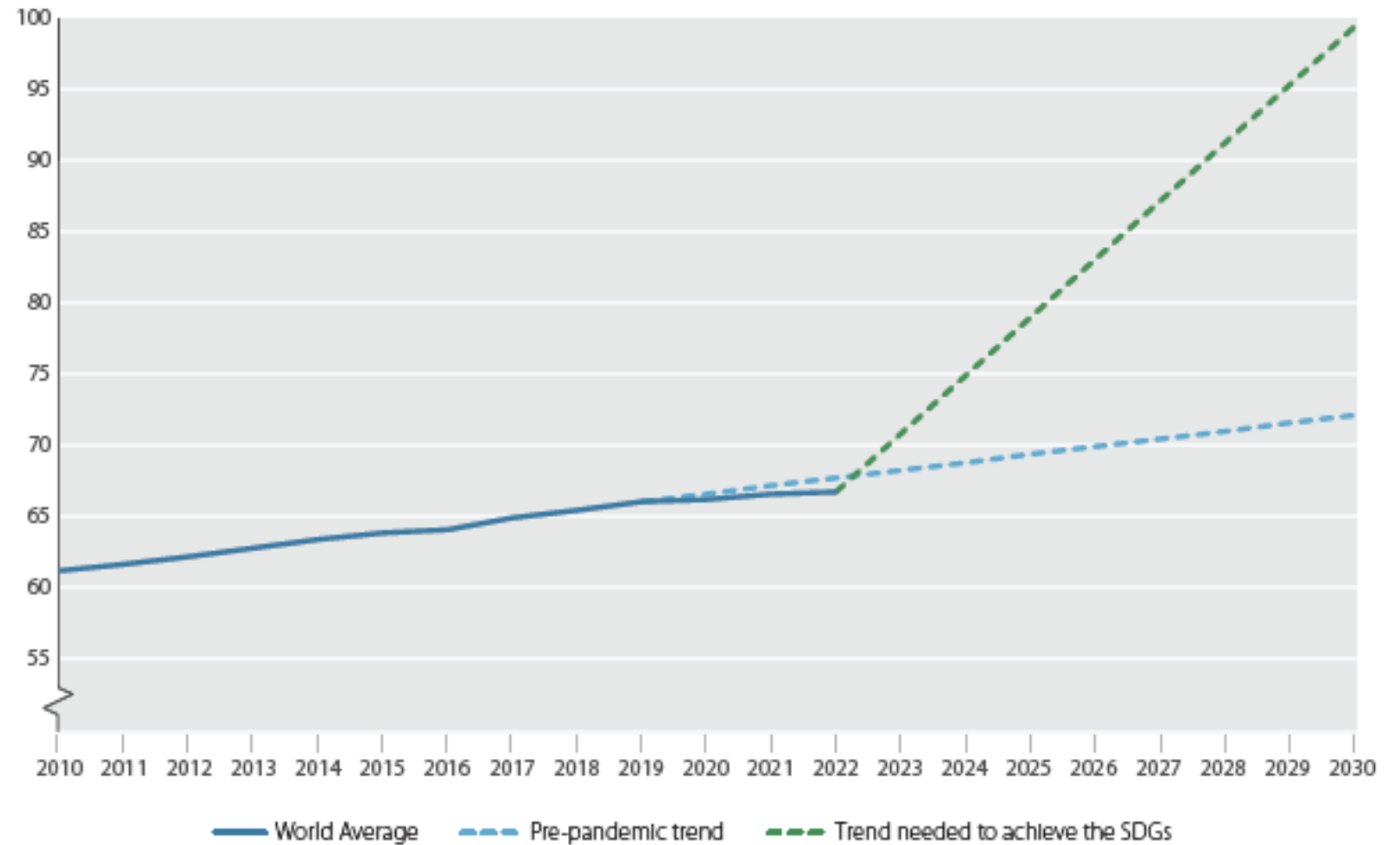
BLAME GAME: COVID-19

Pandemic hurt progress, but...

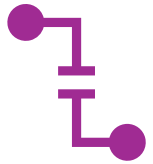
Using it to excuse every failure is futile.

Trend lines were already flattening before 2020.

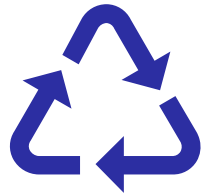
Implementation Curve of the World Sustainable Development Estimated Average by J. Sacks 2023



CALL FOR REFRESH



Reboot mind-sets, not just
spreadsheets



Stop recycling dashboards;
start real-time feedback loops.



Free, critical speech =
better science & policy.



*“If we can’t trust scientists are
speaking freely, how can we
trust science?” – Muthukrishna*

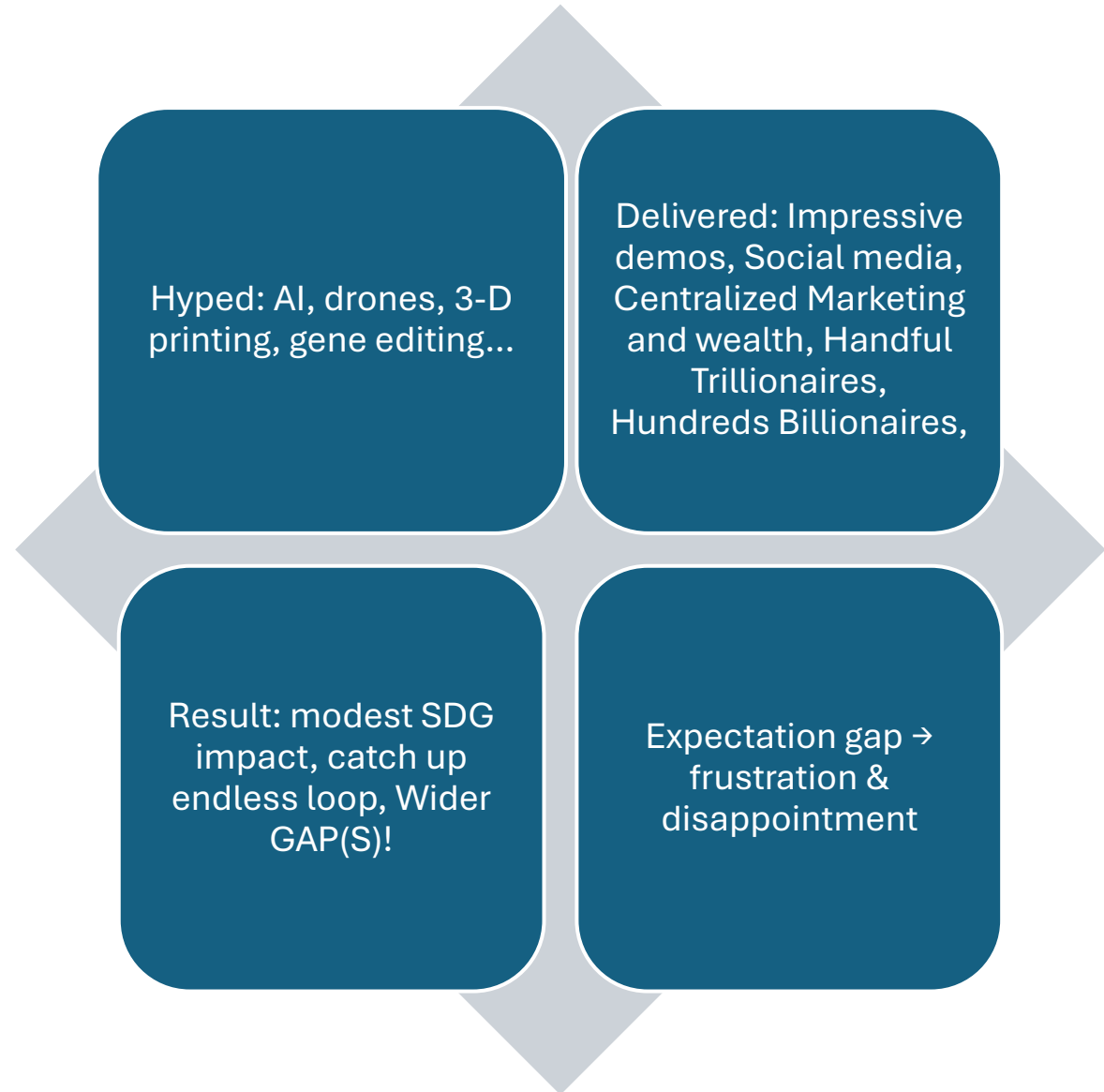


“While we should be investing time figuring out how to reach Mars, we spend it on social media, losing our ability to think critically while turning everyone into Kardashians. **We’re engaged in meaningless nonsense in a world desperately in need of solutions for clean water, flooding protection, climate change, inequality, defense, cybersecurity, education, and infrastructure.**”



What happened to the future? February 2024, Steen Jakobsen, chief investment officer at Saxo Bank

4IR PROMISE vs REALITY



2018, UNCTAD report on the
benefits of Frontier Technologies
for sustainable development
promised :

“Reviving productivity, making
plentiful resources available to
end poverty, and enabling more
sustainable patterns of growth.

Mitigating or even reversing
decades of environmental
degradation through technological
innovation.

Strengthening education as a
lever for development and social
justice, especially in digital
capabilities.

Closing the technological
capabilities gap between
developed and developing
countries through investment in
infrastructure, human capital, and
innovation systems.”



Spotlight on SDG 1: No Poverty

“Eradicate extreme poverty for all people everywhere”

Over a billion people lifted out of extreme poverty.

Target 1.1 \$2.15/day → ZERO by 2030

2024 status: extreme poverty ↑ for first time in 20 years.

People living the extreme poverty globally:

- Pre-pandemic projection 581 million
- 2024 projection 657-676 million

Problem trio?

1. Moving definitions
2. Data overload vs insight
3. Social protection coverage gaps



Indicator: 1.2.2: Proportion of men, women and children of all ages living in poverty in all its dimensions according to **national definitions**.

Indicator: 1.3.1: Proportion of the population covered by social protection floors/systems, by sex, distinguishing children, unemployed persons, older persons, persons with disabilities, pregnant women, newborns, work-injury victims, and the poor and vulnerable.

Target 1.4: By 2030, ensure that **all men and women**, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, **natural resources, appropriate new technology, and financial services, including microfinance**.

In 2023, SDG 1 globally is 85% Between **stagnation and “Fair progress, but acceleration needed”**

Potential Digital Fighters of Poverty

- ☞ **Digital wallets including social aid.**
Digital tools for SME and Farmers.
Mobile broadband connectivity and affordability.
- ☞ **Online vocational courses and certificates.**
Digital platform for reducing food waste
Recycling e-waste.

Candidate Analog Policies:

- ☞ Incentivized adequate healthy family planning.
- ☞ Enforced the right of all kids for elementary education.
- ☞ Subsidized employment fairs and mentorship.
- ☞ Subsidized childcare centers especially for disadvantaged working couples.



SDG 3: Good Health and Well-being

“Ensure healthy lives and promote well-being for all at all ages”

Reduction in child and maternal mortality.

40% decline in new HIV infections.

Persistent challenges:

UN SG 2024 “progress slowing since 2015 in areas like maternal mortality, premature deaths from major non communicable diseases, and access to essential healthcare.”

Emerging health crises like pandemics.

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graph TD; A[Available data tracking the performance of 12 targets:] --- B[Target 3.2: In 2022, global under-five deaths stood at 4.9 million, down from 6.0 million in 2015.]; A --- C[Target 3.8: In 2021, approximately 4.5 billion people lacked access to essential health services.]; A --- D[Target 3.b: The coverage of the third dose of the vaccine protecting against diphtheria, tetanus, and pertussis declined to 84% in 2022—still below the 2019 level of 86%.];
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AI Missed Opportunity:

Artificial Intelligence failed to save the World that was devastated by Covid19.

“A study at the University of Cambridge of over 400 tools using deep-learning models for diagnosing Covid-19 applied to chest x-rays and CT scans data found them entirely unusable.

Another study reported in the journal, Nature, considered a wide range of applications, including predictions, outbreak detection, real-time monitoring of adherence to public health recommendations, and response to treatments and found them to be of little practical use.”

Why AI Failed to Live Up to Its Potential During the Pandemic by B. Chakravorti, Harvard Business Review March 17, 2022



Healthy Future

Scale Up Telemedicine: Mobile penetration above 70% globally, 55% in sub-Saharan Africa.

Open Medical Innovation

Localization of AI-Based Medical Diagnosis

Biotech IP Waiver for LDCs: UN 2018 Technology Bank for LDCs, Türkiye

Governance for Cross-Boundary Medical Data

Incentivize Pharmaceuticals for Rare Diseases

Global Digital Platforms for Preventive Medicine

International Medical e-Passport

Digital Management of Relevant Incentives for Medical Coverage for All

Open Science Platform for Medical Knowledge Circulation



SDG 9: Industry, Innovation, and Infrastructure

“Build resilient infrastructure, promote inclusive industrialization, and foster innovation”

Importance: Industrialization is Modernization (G7; G20)

Challenges:

“Since 2022, the manufacturing sector has faced stagnation, attributed to geopolitical instability, inflation, logistical challenges, rising energy costs, and a broader global economic slow down,” UN May 2024

Call to action, HBR 2024:

“Newer models of technology’s effects on the labor market account for the fact that it absolutely can displace workers and lower wages. In the long run, technology does tend to raise living standards.”

Contribution of sustainable industrialization to the SDGs



Target 9.5: *Global research and development (R&D) expenditure has been climbing from 1.72% of GDP in 2015 to 1.93% in 2021. However, many developing economies have R&D expenditure relative to GDP below 1%.*

Lumping **Research and Development (R&D)** into a single category masks crucial distinctions.

- Developing countries, **public funds were heavily spent on basic "luxury" research, while very little "product" development took place.**
- Industrialized nations, private sector providing the bulk of investment—complemented by roughly **one-third of total funding from public sources.**

Target 9.c: *Expanding Mobile Broadband Access*

*As of 2024, **mobile** broadband (3G or higher) is accessible to 95% of the world's population, up from 78% in 2015.*

In 2020 ITU call to connect all by 2025: “*Broadband Internet user penetration should reach:*

- a) 75 per cent worldwide*
- b) 65 per cent in developing countries*
- c) 35 per cent in least developed countries.”*



SDG 13: Climate Action



“Take urgent action to combat climate change and its impacts”



Climate change is a global crisis



Vulnerable communities bear the brunt of climate impacts.



- **UNDP** short film, Frankie the dinosaur urges world leaders not to choose extinction. October 2021

UN **actionable** calls July 2024 “Synergy Solutions for Climate and SDG Action:

Bridging the Ambition Gap for the Future We Want.”

- “Only with unified action can we succeed,
 - Fragmentation is the enemy,
 - Deep reforms needed,
 - Avoiding top-down approaches,
 - Cities as drivers,
- Breaking down silos,
 - Experts are everywhere,
 - Protecting the most vulnerable,
 - We cannot ‘do’ if we don’t ‘know’,
 - Change won’t happen overnight.”

UNEP assembly Feb 2024: More Action!

Encourages Member States to:

(a) Enhance synergies, cooperation, or collaboration, as appropriate... etc.

(b) Enhance knowledge and understanding of the potential co-benefits of synergies... etc.”

Requests the Executive Director of UNEP subject to the **availability of resources**, to:

(a) Assist Member States, upon request, to enhance synergies, cooperation, or collaboration... etc.

(b) Collect, synthesize, and share good practices, tools, success stories, and lessons learned among Member States... etc.

(c) Report to the Environment Assembly at its seventh session on the implementation of the present resolution.”



UNFCCC

COP Process:

“the supreme **decision-making body** of the Convention. All States that are Parties to the Convention are represented at the COP, at which they review the implementation of the Convention and any other legal instruments that the COP adopts and take decisions necessary to promote the effective implementation of the Convention, including institutional and administrative arrangements”

COP 27: Participants > 35,000

COP 28: Participants > 70,000

COP 29: Participants > 70,000



During COP 29 hosted by Azerbaijan in November 2024, the **open letter to the UN**: "*COP current structure simply cannot deliver the change at exponential speed and scale, which is essential to ensure a safe climate landing for humanity,*" said **former** UN Secretary General Ban-Ki Moon, **former** UN climate chief Christiana Figueres and **former** president of Ireland Mary Robinson.

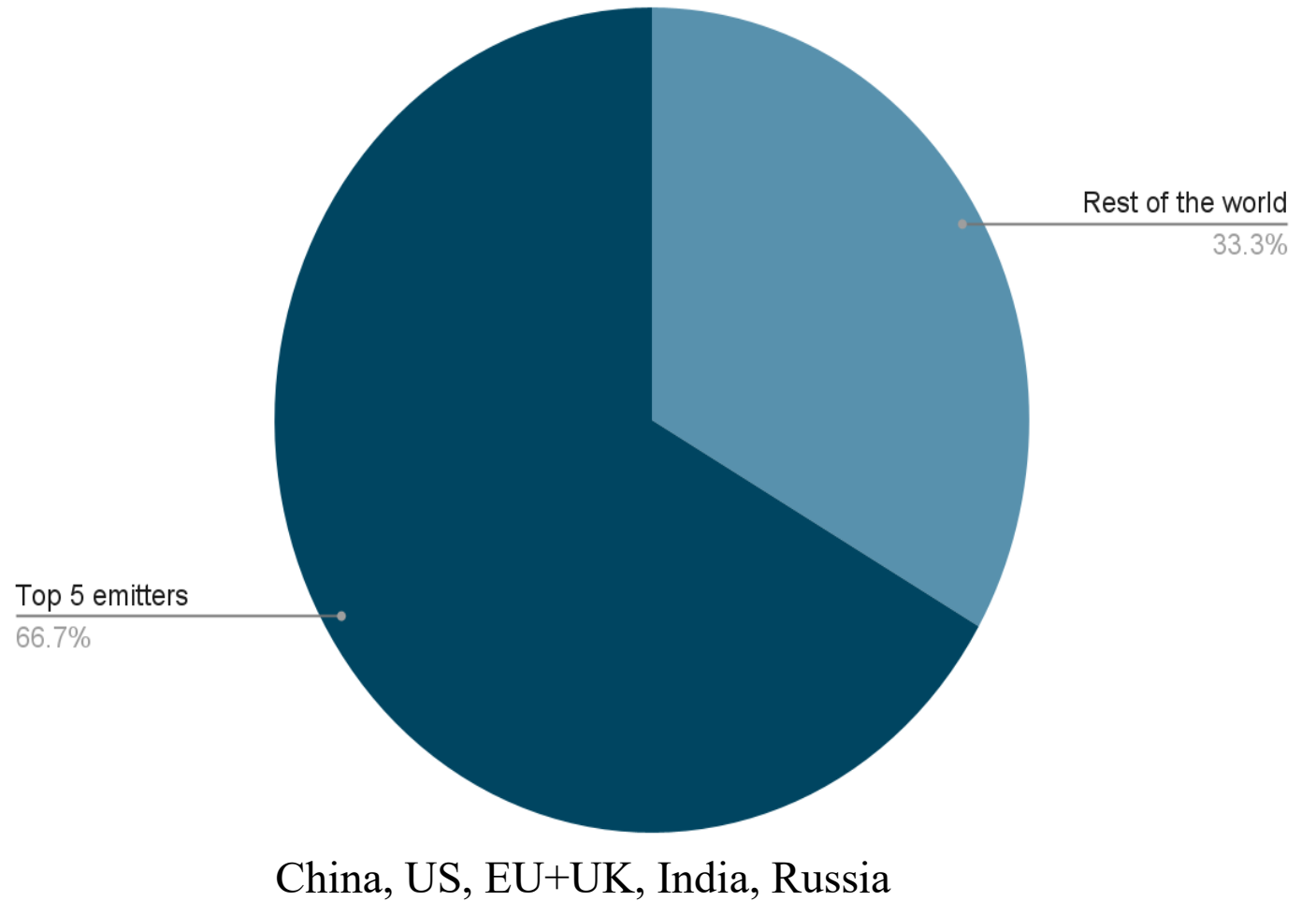


The letter called for urgent reforms needed : A **lean mechanism** reacting to emergencies and adopting possible science and technology-based solutions that are changing in exponential pace. "*Instead of one huge annual COP, the letter calls for smaller, more frequent meetings to keep up momentum, focus on targeted deliverables and ensure governments are not the only voices heard during official discussions.*"

Hopeful Civic Action

Global Action Plan for Solving our Climate Crisis Now

Speed & Scale, a Global Action Plan for Solving our Climate Crisis Now; John Doerr, Penguin, USA 2021. In consultation with: Climate champions, the climate reality project, countdown, energy innovation, environmental defense fund, and World resources institute

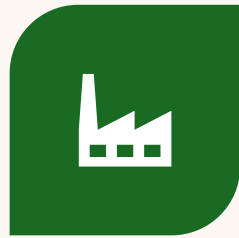


Greenhouse Gases (GHG), totaled an estimated 59 gigatons of human-caused emissions in 2019

e.g. Emissions Falcon 9 launch = 400 transatlantic flights, on average SpaceX had a launch every 2 days during 2024.



41% ENERGY



20% INDUSTRY



15%
AGRICULTURE



14%
TRANSPORTATION




10% NATURE


To 'go net zero' by 2050:

To reduce greenhouse gas emissions and/or to ensure that any ongoing emissions are **balanced** by removals

UN in 2022, established a High-Level Expert Group on the “*Net-Zero Emissions Commitments of Non-State Entities to develop stronger and clearer standards for net-zero emissions pledges by non-State entities – including businesses, investors, cities, and regions – and speed up their implementation.*”



The Group during COP 27 (2022) report on “*Integrity Matters: Net Zero commitments by Businesses, Financial Institutions, Cities and Regions.*”



The Secretary General during the launching event: “*We must have zero tolerance for net-zero greenwashing.*”

Animals raised for livestock are responsible for releasing the methane equivalent of some 3.1 Giga tonnes of CO₂.

If the world's one billion cows were a country, their emission would rank 3rd after China and the USA, knowing that the USA population is ~340 million.

A typical American consumes more than their own weight of red meat and poultry annually!

Methane traps 30 times as much heat as CO₂ hence more impactful on global warming. The main sources are livestock, landfill, and the Natural gas that consists of 90% methane.



ROOT CAUSES OF UNDER- PERFORMANCE

Measurement obsession > Action

Fragmented financing & debt stress

Technology not diffusing to last mile

Competing crises (climate, wars, inequality)

Attention economy (social media) steals focus

WHAT'S WORKING – BRIGHT SPOTS

mRNA platform → rapid vaccines

Mobile-money & digital ID (Kenya, India)

Satellite data for crop insurance

City-level climate solutions

Lesson:
pairing tech + political will + local context = results.

“We cannot create a future fit for our grandchildren with a system built by our grandparents.”

UN Secretary-General, the Summit of the Future, New York, 23 September 2024

UN 2.0

UN “*Our Common Agenda Policy Brief 11 UN 2.0*” issued in 2023 ways for technologies to support achieve the SDGs,

SDG Indicators: Drivers of Policy Change

In 2015, “*the United Nations Statistical Commission created the Inter-agency and Expert Group on SDG Indicators (IAEG-SDGs).*”

“three working groups of the IAEG-SDGs address Statistical Data and Metadata Exchange (SDMX), geospatial information, and measurement of development support.”

“Global public policy in a quantified world by Oxford Policy and Society concluded in 2022 that:

The SDGs are powerful levers in the production of new policy directions globally. However, this is not simply a focus on “evidence-making,” but rather a complex interplay of material, techno-political, and organizational structures within which (statistical) knowledge is produced, disseminated, and translated into global public policy.”

UN Summit of the Future (2024), pact was a balanced act.

Pact covered **5 areas** with “**56 actions**” in the areas of :

sustainable development and financing for development,

international peace and security,

science, technology and innovation and digital cooperation,

youth and future generations,

and transforming global governance.



2024 Global Digital Compact to:

- Connect all people, schools and hospitals to the Internet;
- Anchor digital cooperation in human rights and international law;
- Make the online space safe for all, especially children, through actions by governments, tech companies and social media;
- Govern Artificial Intelligence, with a roadmap that includes an International Scientific Panel and a Global Policy Dialogue on AI;
- Make data more open and accessible, with agreements on open-source data, models, and standards;



Lighting the Way Forward

Empower	Empower individuals and communities to be part of the solution.
Prioritize	Prioritize 3–5 “keystone” SDG targets per country.
Fund	Fund them with predictable 5-year envelopes (2030)
Embed	Embed real-time data loops; publish openly.
Use	Use 4IR tech only where it closes a known gap.
Protect	Protect free speech & scientific dissent.

The Sustainable Development Goals are more than a framework:

Inspirational

A promise to future generations

Let us confront the ghosts of our past and use every tool for humanity

Potential of AI, and data to drive transformative solutions

Opinion: “No one will win the AI war, like the Internet:”

- NO CHAMPION
- UTILITY for ALL
- **Winners: Applications, Adequate, Problem solvers, Localized**

***** YOU *****

Final Thoughts

We've halved extreme poverty once – can bend the curve again.

Frontier tech costs keep falling.
DISRUPTION

Hope ≠ optimism;
it is disciplined action!

“Hope is not a lottery ticket... it's an axe.” –
Rebecca Solnit

INVITATION



Investigate

- Challenge • Co-create



What ghost goal will YOU help
bring back to life?