



# Harnessing AI for Climate Action: *Insights from the World Bank*

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# AI is everywhere ... including Development and Climate

**Forbes**  
FORBES > LEADERSHIP > CAREERS  
**The Future Of Work: How Will AI Change Business?**  
David Morel Contributor  
I'm passionate about workplace trends, people & innovative leadership  
Aug 31, 2023, 10:44am EDT

Home > Grow Your Business > Technology  
**How Artificial Intelligence Will Transform Businesses**  
Updated Oct 23, 2023

**AI Improves Employee Productivity by 66%**  
**Summary:** Using generative AI (like ChatGPT) in business improves users' performance by 66%, averaged across 3 case studies. More complex tasks have bigger gains, and less-skilled workers benefit the most from AI use.

**Harvard Business Review**  
Business And Society | AI Won't Replace Humans — But Humans With AI Will Replace Humans Without AI  
Business And Society  
**AI Won't Replace Humans — But Humans With AI Will Replace Humans Without AI**  
August 04, 2023

**THE WALL STREET JOURNAL.**  
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TECHNOLOGY | ARTIFICIAL INTELLIGENCE  
**Tech Leaders Say AI Will Change What It Means to Have a Job**  
At WSJ Tech Live, OpenAI's Sam Altman said coming workforce changes will play out unevenly

**TIME**  
IDEAS • TECHNOLOGY  
**How the AI Revolution Will Reshape the World**  
August 04, 2023

McKinsey Global Institute  
**Notes from the AI frontier: Modeling the impact of AI on the world economy**  
September 4, 2018 | Discussion Paper

**Forbes**  
**Yes, AI Increases Productivity, Study Suggests**

**MIT MANAGEMENT REVIEW**  
Smart. Open. Grounded. Inventive. Read our Ideas Made to Matter.  
IDEAS MADE TO MATTER | ARTIFICIAL INTELLIGENCE  
**Why 'the future of AI is the future of work'**

**LIFE WITH A.I.**  
**Stanford and MIT study: A.I. boosted worker productivity by 14%—those who use it 'will replace those who don't'**  
Published Tue, Apr 25 2023-11:49 AM EDT

SEARCH  
**AI intelligence is transforming the world**



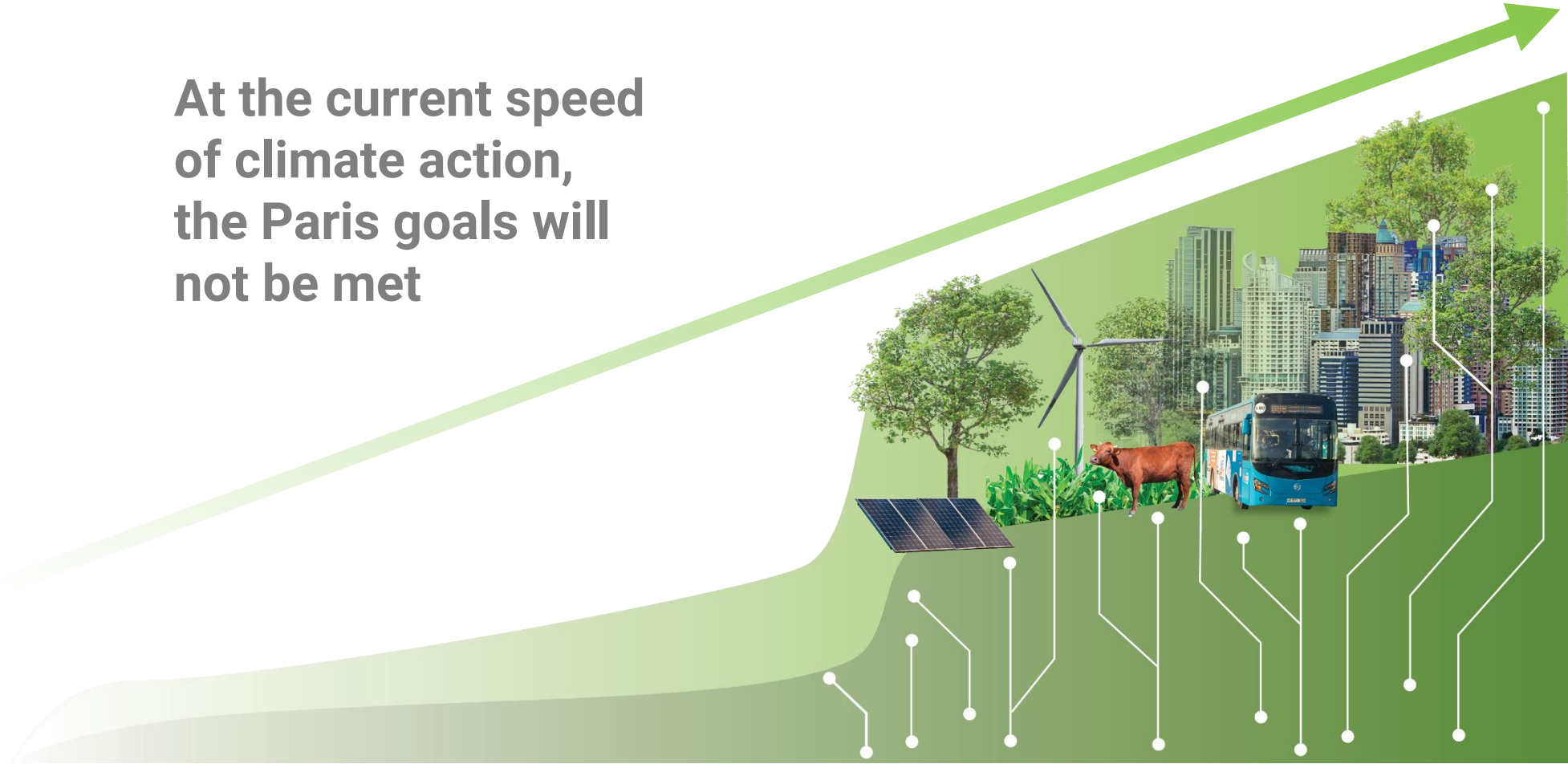
An aerial photograph of a dense, lush green forest. The trees are tightly packed, creating a textured canopy of various shades of green. The lighting is soft, suggesting a slightly overcast day or a shaded area. In the center of the image, the text "What are the opportunities?" is written in a clean, white, sans-serif font. The text is centered horizontally and vertically, standing out clearly against the dark green background of the forest.

**What are the opportunities?**

# AI can help accelerate mitigation and enhance resilience

At the current speed of climate action, the Paris goals will not be met

PARIS GOALS 2030





# Examples of AI in Asia

*The World Bank has  
been leveraging AI in  
its projects since 2016*

## Myanmar National Food and Agriculture project

**AI enabled disease identification app** that utilizes smartphone cameras and AI to identify agricultural diseases. This allows for early detection and targeted responses to potential agricultural threats. Additionally, AI enabled digital applications for extension workers, combined with weather and market information helps to enhance agricultural services, reaching small-scale farmers, women, and other vulnerable groups.



## Southeast Asia Regional Program on Combating Marine Plastics

**AI for improved waste management** of plastics, specifically in the area of collection and segregation. The use of digital tools incorporating AI can enhance the traceability of consumer products, contributing to more effective waste management practices.



## Vietnam: Innovating for Grassroots Health Service Delivery

**AI/ML to assess climate and disaster risk**, leveraging predictive models to analyze the potential impact of extreme weather events such as sea level rise and flooding. The project can anticipate specific climate risks in different provinces of Vietnam, enabling more targeted investments in climate-resilient infrastructure.



An aerial photograph of a dense, lush green forest. The trees are tightly packed, creating a textured canopy of various shades of green. The lighting is soft, suggesting a slightly overcast day or a shaded forest floor. The overall mood is serene and natural.

**How do we create foundations for transformative  
*and* sustainable AI?**



# Key challenges in harnessing AI for Climate Action



## Low access to compute and data storage

Cloud computing in Africa has a penetration rate of 15% (71% in Europe), and data centers are concentrated in the US, EU and East Asia. (TBI 2024, Data Center Map)



## Limited supply of AI talent and capacity

AI talent is highly concentrated in high-income countries (Stanford HAI 2024)



## Policy and governance lag

Just 10 countries in Africa, the Middle East and Latin America combined saw AI mentioned in legislative proceedings in 2024 and few have national-level documents to guide AI investments and efforts. (Stanford HAI 2024)



## Energy access and GHG

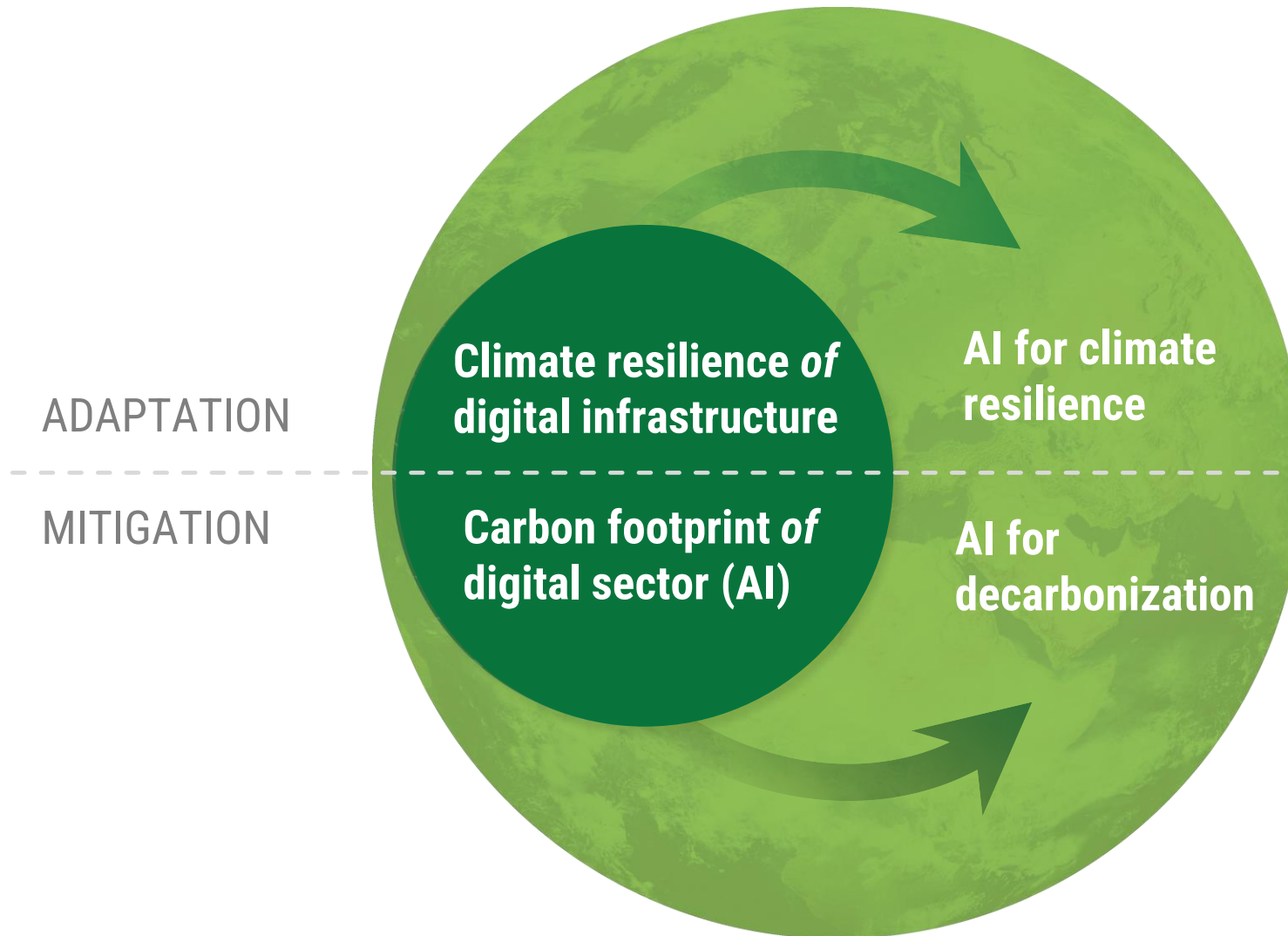
Training AI models requires vast amounts of computing power. Some estimate that server racks for AI training consume between 5 to 7 times more energy than conventional server racks, and between 2 to 3 times more energy for inference (S&P Global)

Inequitable access to AI-ready infrastructure leading to a **greater digital divide**

Lacking skills and capacity driving low levels of **innovation and adoption of AI solutions**

Limited capacity to anticipate and respond to emerging ai risks and impacts complicating efforts to promote **responsible AI**

# Working to harness AI – and make it greener





# Support countries realize the transformative potential of AI

## Our Pillars of Support

### AI Solutions

Help **unlock innovation and adoption** of AI solutions by supporting countries in testing, validating, and scaling AI regulation and solutions to address local challenges, improve public services, and catalyze local ecosystems.

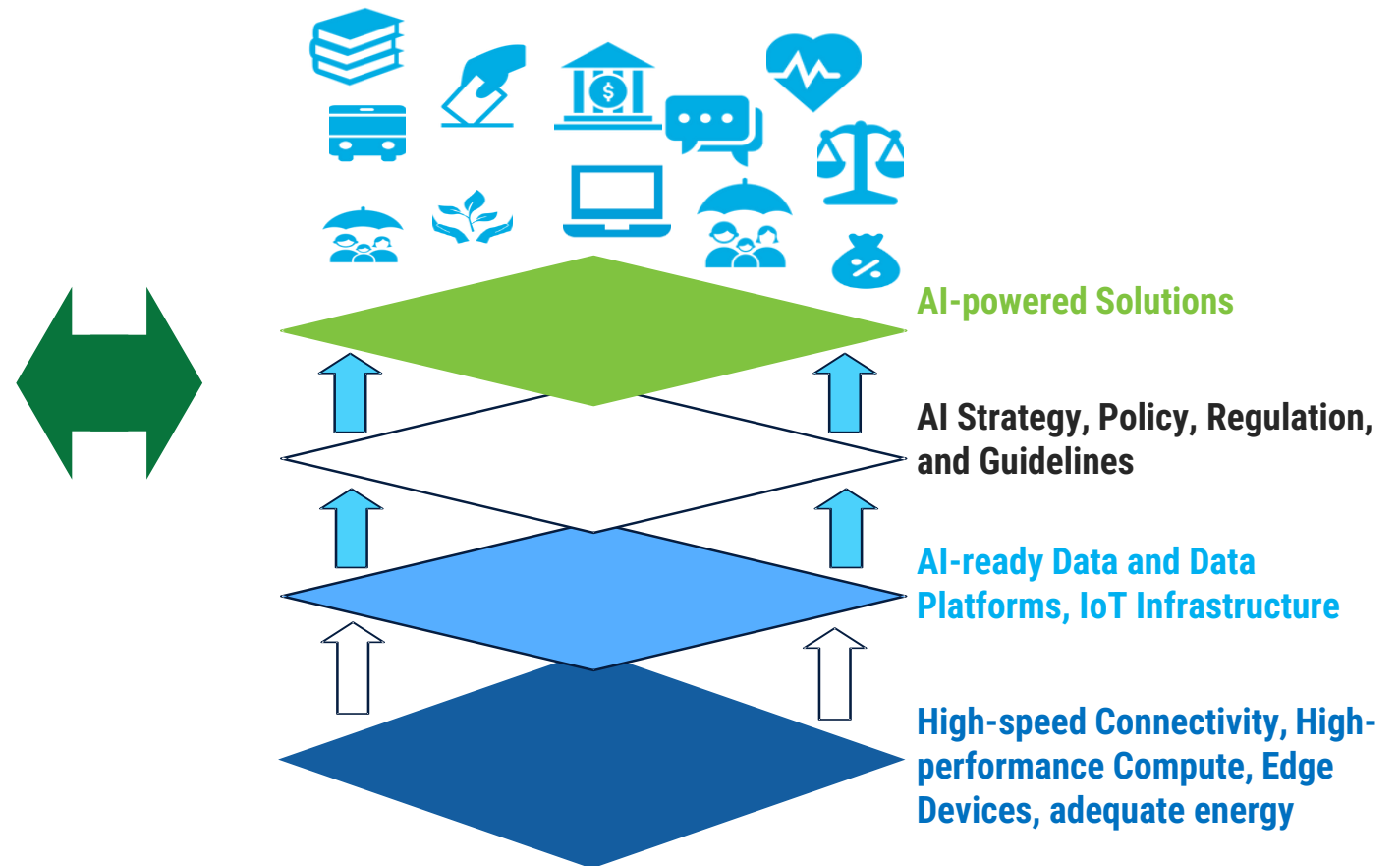
### AI Governance

Promote **responsible AI** by assisting countries in creating and implementing robust AI governance frameworks and policies to anticipate and respond to emerging AI risks and impacts and promote **ethical, fair, transparent use of AI technologies**.

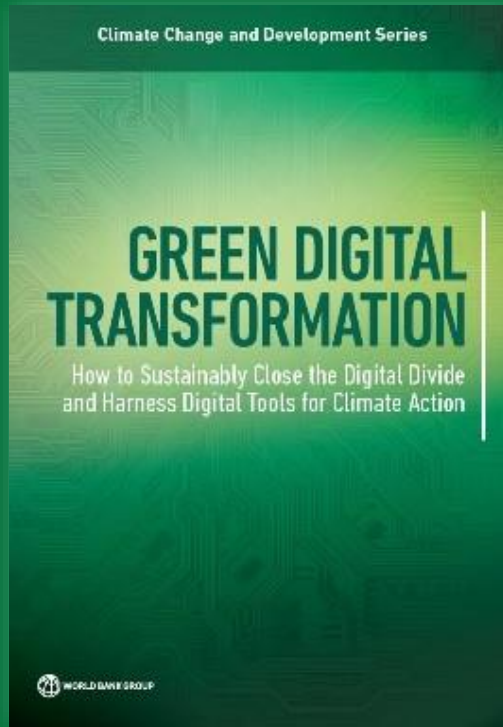
### AI Infrastructure & Data

Mitigate the **digital divide** by facilitating equitable access to **AI-ready infrastructure**, focusing on **sustainable energy access, compute power, data storage, and connectivity**, in collaboration with other World Bank sector teams and business lines.

## The AI Value Chain/Stack



# More resources



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Learning from Korea's Data Policies and Practices for Harnessing AI



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Korea Case Study for Greening the ICT Sector







# Thank You

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