Input Paper: The Role of Science in the Fourth International Conference on Financing for Development

Response to a call for inputs for an Elements Paper on Financing for Development in Preparation for the UN Financing for Development Conference (FfD4), which will take place

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Introduction

The Fourth International Conference on Financing for Development (FfD4), scheduled for June 2025, presents an opportunity to address pressing global challenges through a holistic financing framework aligned with the Sustainable Development Goals (SDGs). Science, technology, and innovation (STI) are indispensable tools for overcoming obstacles, building resilience, and preparing for future risks. This paper argues for integrating science across the development financing agenda, demonstrating how it can inform policies, drive innovation, and offer solutions to systemic issues.

By embedding scientific insights into the Financing for Development (FfD) process, we can accelerate progress toward sustainable development, foster accountability, and ensure equitable outcomes. Below are key recommendations for considering science within the FfD4 framework.

I. A Global Financing Framework with Science at its Core

A successful financing framework must place scientific research and innovation at its heart. By doing so, it can ensure more efficient use of resources, more effective policy interventions, and more resilient systems for future challenges.

Recommendation 1: Establish a Science-Based Advisory Panel for FfD Decision-Making

Create a permanent advisory body that includes scientists and policy experts working across the three core dimensions of sustainability – environmental, social, and economic – to guide the formulation and implementation of financial policies. This panel would provide evidence-based recommendations, ensuring financial decisions are rooted in the latest scientific findings and technological innovations. It would also serve to bridge gaps between financial institutions and the scientific community.

Recommendation 2: Invest in Research and Development for Global Challenges

Governments and international organizations should commit to significantly increasing funding for research and development (R&D) related to critical areas such as climate science, public health, and sustainable agriculture. Scientific research should ensure that solutions are tailored to local and global contexts and challenges, including in regions most affected by climate change and social inequality.

II. Action Areas

a. Domestic Public Resources: Leveraging Technology for Efficient Taxation

Efficient mobilisation of domestic public resources is a key priority for sustainable development. Technology can improve tax collection, reduce inefficiencies, and strengthen governance.

Recommendation 3: Promote STEM Education to Build Capacity for Resource Management

Countries must invest in STEM (Science, Technology, Engineering, and Mathematics) education to ensure long-term sustainability. This will equip future generations with the skills to manage resources, innovate in public finance, and develop context-specific solutions for local challenges.

b. Domestic and International Private Business and Finance: Aligning Innovation with Sustainability

Private sector investments must align with the principles of sustainable development. Science and innovation can help shape private-sector financing, contributing to environmental sustainability, social inclusion, and equitable growth.

Recommendation 4: Incentivize Green Technologies and Sustainable Business Practices

Science-based regulatory frameworks should guide responsible corporate behaviour, ensuring alignment with environmental, social, and governance (ESG) goals, as well as governmental policies to promote sustainable business activities.

Recommendation 5: Promote Public-Private Partnerships for Innovation

Encourage collaboration between governments, academia, and the private sector to develop innovative solutions in priority areas such as clean energy, sustainable agriculture, and digital finance. These partnerships can help drive technological advancements contributing to sustainable development.

c. International Development Cooperation: Strengthening Science-Driven Partnerships

Science and technology are essential for fostering practical international development cooperation, particularly in sharing knowledge and technologies between countries. Global collaboration ensures that developing nations have the tools to address pressing challenges.

Recommendation 6: Scale Up Global Research Partnerships for Sustainable Development

Increase funding for global scientific collaborations in climate resilience, health technologies, and food security. International development programs should emphasise transferring scientific knowledge and technology to low-income and vulnerable countries to enhance their development capacities.

Recommendation 7: Facilitate Technology Transfer and Knowledge Sharing

Develop international agreements that facilitate North-South, South-South and triangular cooperation to allow for the exchange of best practices, scientific expertise, and innovative technologies.

d. Making International Trade Sustainable and Inclusive

International trade rules and practices must be brought in line with the imperative of inclusive and sustainable development and move beyond mercantilism.

Recommendation 8: Develop Science-Based Standards for Sustainable Trade

Establish international trade policies and agreements based on scientific research, ensuring that global trade practices are environmentally and socially sustainable.

Recommendation 9: Use Digital Platforms to Increase Market Access for SMEs

Leverage digital tools and AI-driven platforms to make global trade more accessible to small and medium enterprises (SMEs), particularly those in developing countries. These technologies can reduce barriers to market entry, facilitate cross-border transactions, and help SMEs tap into international trade opportunities.

e. Debt and Debt Sustainability: Data-Driven Approaches to Debt Management

Debt sustainability remains a critical challenge for many countries, particularly as they face increased global economic volatility. Science and data analytics can offer solutions for more effective debt management.

Recommendation 10: Apply Data Science to Sovereign Debt Relief

Governments and financial institutions should use science, including data science and AI, to develop environmentally and socially sustainable debt relief strategies. Tools like debt-for-nature swaps, guided by scientific assessments, can offer innovative solutions to reduce debt while supporting environmental conservation.

Recommendation 11: Develop Long-Term, Science-Based Debt Relief Strategies

Countries should adopt long-term debt relief strategies incorporating scientific climate, social, and economic considerations. These strategies would ensure that debt policies not only address immediate fiscal needs but also contribute to sustainable development in the long run.

III. Addressing Systemic Issues: Building Resilience Through Science

The world faces complex systemic risks that transcend borders, such as climate change, pandemics, and geopolitical instability. Addressing these risks requires

scientific research and collaboration across disciplines to develop integrated solutions.

Recommendation 12: Invest in Interdisciplinary Scientific Research to Address Systemic Risks

Governments and international organisations should fund interdisciplinary research that brings together experts in all facets of sustainability—including climate scientists, economists, public health experts, and financial analysts—to identify and mitigate global risks. Scientific knowledge can help inform policy responses and improve the resilience of the global economic system.

Recommendation 13: Improve Global Early Warning Systems Based on Scientific Data

Improve global early warning systems that use real-time data to predict and respond to emerging systemic risks, such as pandemics and environmental disasters. These systems would enable faster, more coordinated responses to crises, reducing the impact on vulnerable populations.

IV. Emerging Issues: Science as a Tool for Addressing New Global Challenges

Climate Change and Environmental Resilience

The triple planetary crisis – climate change, air pollution, and biodiversity loss – is perhaps the most urgent global challenge, and science is essential for mitigation and adaptation. Humanity also faces a number of other, interlinked social, economic and health challenges. Scientific advancements offer pathways for ensuring environmental sustainability and building resilient societies.

Recommendation 14: Align Financial Policies with Sustainability Science

Governments should develop financial policies informed by sustainability science, including the promotion of climate-smart financial products. These policies would mobilize resources for climate mitigation and adaptation projects while ensuring social sustainability and catalysing private sector investment.

Digitalisation and the Fourth Industrial Revolution

Digital technologies are rapidly transforming the global economy. While they offer immense opportunities, they pose new risks, such as cybersecurity threats and unequal access.

Recommendation 15: Foster Science-Based Regulation of Digital Finance

Governments should adopt science-based regulatory frameworks to address the risks posed by digitalisation, such as data privacy, cybersecurity, and digital exclusion. At the same time, digital literacy and infrastructure investments should be prioritised to ensure that all countries, particularly developing ones, can benefit from the digital economy.

V. Data, Monitoring, and Follow-Up: Ensuring Accountability Through Science

Monitoring progress and ensuring accountability is key to successfully implementing the Financing for Development outcomes. Science and data offer robust tools for tracking financial flows, development outcomes, and systemic risks.

Recommendation 16: Develop Open Data Platforms for Financial Transparency

Governments and international organisations should invest in open data platforms that provide real-time, reliable data on financial flows, development outcomes, and risk assessments. These platforms would enable greater transparency and accountability in financing development while facilitating informed decision-making.

Recommendation 17: Use AI and Data Science for Monitoring Progress Towards SDGs

Leverage artificial intelligence (AI) and data science to monitor progress on the Sustainable Development Goals (SDGs). These technologies can analyse vast datasets, identify trends, and flag emerging risks, helping policymakers adopt strategies to ensure that financial flows contribute to long-term development goals.

Conclusion

As the global community prepares for the Fourth International Conference on Financing for Development, it is clear that science, technology, and innovation must play a central role in shaping the future of development financing. We can build a more resilient, equitable, and sustainable global financial system by embedding science into the financing framework. The recommendations outlined in this paper highlight actionable steps for integrating science into financial policy reform, fostering innovation, and addressing systemic risks. Through science-driven approaches, FfD4 can help create a financing system that fits the challenges of the 21st century.