UNEP

THE FINANCIAL SYSTEM WE NEED

FROM MOMENTUM TO TRANSFORMATION

HIGHLIGHTS

2nd Edition

Inquiry: Design of a Sustainable Financial System

OCTOBER 2016

The UNEP Inquiry

The Inquiry into the Design of a Sustainable Financial System has been initiated by the United Nations Environment Programme (UNEP) to advance policy options to improve the financial system's effectiveness in mobilizing capital towards a green and inclusive economy—in other words, sustainable development. Established in January 2014, it published the first edition of 'The Financial System We Need' in October 2015. The Inquiry's mandate currently extends to the end of 2017, with work focused on deepening and taking forward its findings.

More information on the Inquiry is available at: *www.unepinquiry.org* and *www.unep.org/inquiry* or from: Ms. Mahenau Agha, Director of Outreach *mahenau.agha@unep.org*.

The Team

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This second edition of 'The Financial System We Need' has been prepared in association with UNEP Finance Initiative.

KEY MESSAGES: FROM MOMENTUM TO TRANSFORMATION

1

The global financial system needs reshaping to finance an inclusive, prosperous and environmentally sound future, in other words: to achieve sustainable development.

- The Inquiry's 1st edition of "*The Financial Sytem We Need*" published in 2015 identified:
  - The need for reforms within the financial system that can correct market and policy failures and deliver sufficient financing for sustainable development, while complementing both real economy actions and public finance measures.
  - A 'quiet revolution' in how such actions across the financial system were starting to respond to this challenge, with notable leadership from developing, as well as some developed, nations.

The Inquiry's first generation of findings have been widely welcomed and reaffirmed through subsequent developments.

2

This momentum has dramatically increased over the past year.

- One year on, these efforts have accelerated, through:
  - *Market Leadership*: Leading financial institutions are recognizing that sustainable development is key to their future success, as exemplified by the green bond market, with US$118 billion now outstanding.
  - *National Action:* Financial policymakers and regulators are acting to drive the reallocation of capital, improve risk management and enhance transparency.
  - *International Cooperation:* In 2016, for the first time, the G20 and the Financial Stability Board are exploring how to develop the financial system to take greater account of environmental factors.

3

Policy, market and broader international drivers are underpinning this momentum.

- Adoption of the Sustainable Development Goals and the Paris Agreement on climate change.
- National development priorities, particularly of developing countries.
- Efforts to correct market and policy failures across the financial system.
- Growing technological disruption to the financial system.
- Rising social expectations of financial system performance.
- Green finance becoming a competiveness factor for businesses and financial centres.

4

Today's momentum remains inadequate to deliver the transformation needed to finance sustainable development.

- Natural capital continues to decline precipitously, alongside growing social inequality and unrest.
- Sustainable financial flows and stocks remain marginal to the deployment of capital, worldwide.
- Financial system remains disconnected from the long-term needs of the real economy.
- Financial stability is increasingly threatened by the effects of today's unsustainable economy.

5

Key steps can align the purpose and impact of the financial system to serve the real economy in transition to sustainable development.

1. Anchor sustainability in national strategies for financial reform and development.
2. Channel technological innovation to finance sustainable development.
3. Realize the triple leverage potential of public finance.
4. Raise awareness and build capabilities across the system.
5. Embed sustainability into common methods, tools and standards across the financial system.

THE FINANCIAL SYSTEM WE NEED: FROM MOMENTUM TO TRANSFORMATION

The 2016 second edition of 'The Financial System We Need' is organized into three physical parts:

1. *Highlights:* this stand-alone policy summary of the key messages, arguments, conclusions and recommendations.

2. *Main report: (a) key messages; (b) highlights of the overall report; followed by the (c) main body of the report comprising:*

    - An in-depth review of recent momentum,
    - An exploration of the significance of financial technology, or 'fintech',
    - The first iteration of a proposed performance framework, and
    - Key conclusions and recommendations.

3. *Working papers:* a series of six technical papers covering each topic of the main report, authored by the UNEP Inquiry and partners, will be released separately.

In addition, we recommend that the second edition be read in conjunction with a number of other recently published pieces, including:

- '*Financing Sustainable Development: Moving from Momentum to Transformation in a Time of Turmoil*', released as a UNEP Inquiry Briefing at the time of the UN General Assembly in September 2016.
- '*G20 Green Finance Synthesis Report*', the first report of the G20 Green Finance Study Group, released on the occasion of the G20 Summit in Hangzhou, China in September 2016, and a set of 14 associated technical papers prepared as inputs to the work of the Study Group made available at the same time.

Finally, many of the 80 working papers published by the UNEP Inquiry since 2014 have been referenced in this second edition of our global report, all of which are freely available online.

Reports and papers can all be accessed at: *www.unepinquiry.org*.

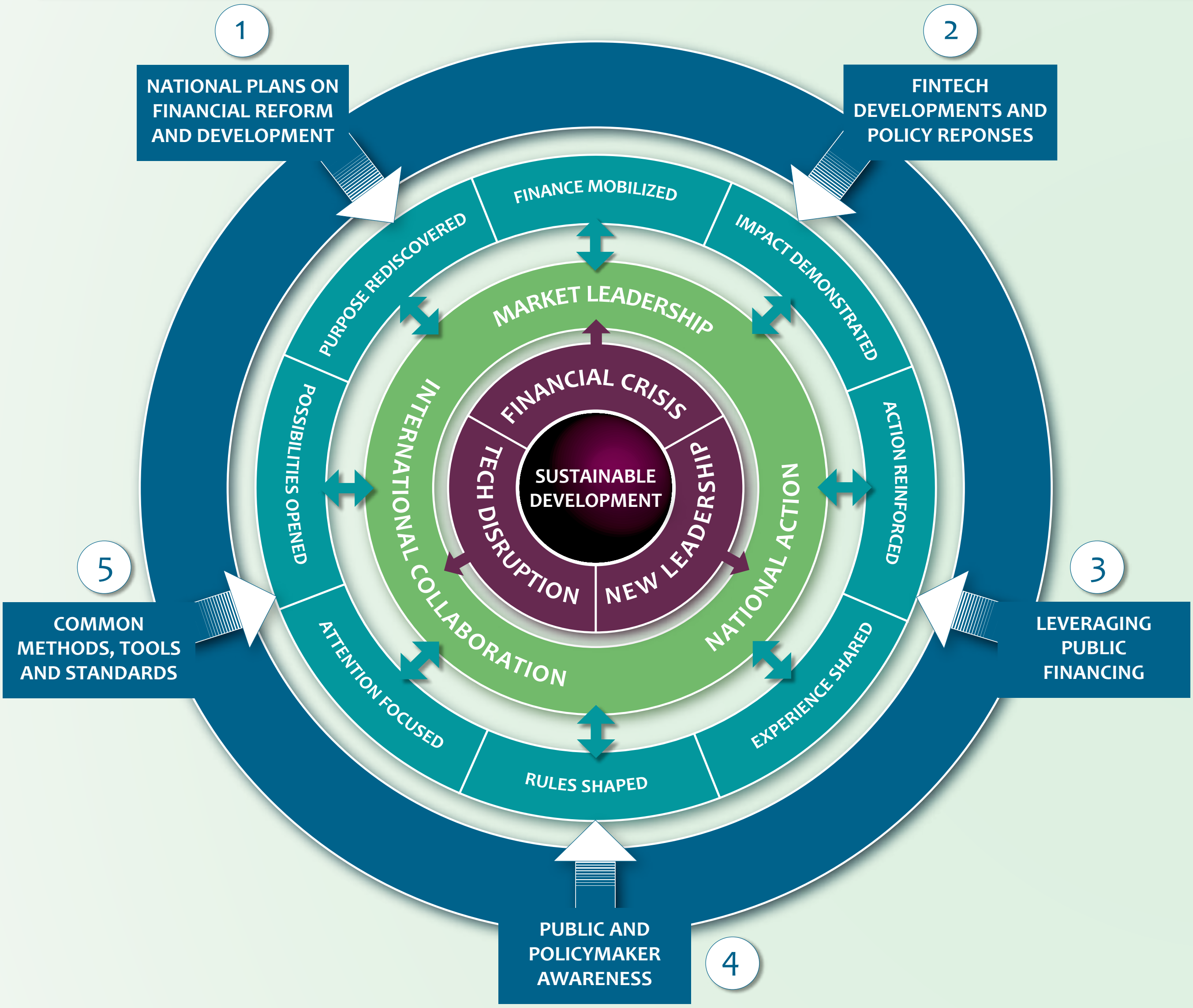
MOMENTUM

Efforts are accelerating to align the financial system with sustainable development.

MARKET LEADERSHIP: Financial institutions and markets are developing innovations such as green bonds, green ratings and stress tests.

NATIONAL ACTION: Policymakers and regulators are introducing measures to promote capital reallocation, improve risk management, enhance reporting and clarify responsibilities of financial institutions.

INTERNATIONAL COOPERATION: Engagement by the G20 and by the Financial Stability Board (FSB) is increasing.



DRIVERS

The global financial system is in turmoil and needs reshaping to finance an inclusive, prosperous and environmentally sound future.

SUSTAINABLE DEVELOPMENT: Trillions of dollars need to be mobilized to meet global goals such as the SDGs and the Paris Agreement.

FINANCIAL CRISIS: Policy action is focused on improving the efficiency, effectiveness and resilience of the financial system.

TECHNOLOGY DISRUPTION: Rapid developments in financial technology are disrupting incumbent models and creating new possibilities.

NEW LEADERSHIP: New sources of influence are becoming important, reflecting the green industrialization and urbanization challenge for developing and emerging economies.

From **MOMENTUM** *to* **TRANSFORMATION**

SYSTEM DYNAMICS

System dynamics are enhancing progress, but momentum remains inadequate to deliver the transformation needed.

IMPACTS DEMONSTRATED: Early evidence of impact strengthens case for action.

PURPOSE REDISCOVERED: Financial rule-makers are reinterpreting their mandates to take account of sustainable development.

ACTION REINFORCED: Market leadership and policy co-evolve.

EXPERIENCE SHARED: National leadership drives international cooperation.

MARKETS SHAPED: Public finance develops new financial products and shapes rules for them to grow.

POSSIBILITIES OPENED: Technological change will reshape the financial system.

ATTENTION FOCUSED: Public expectations of financial system's role in sustainable development are growing.

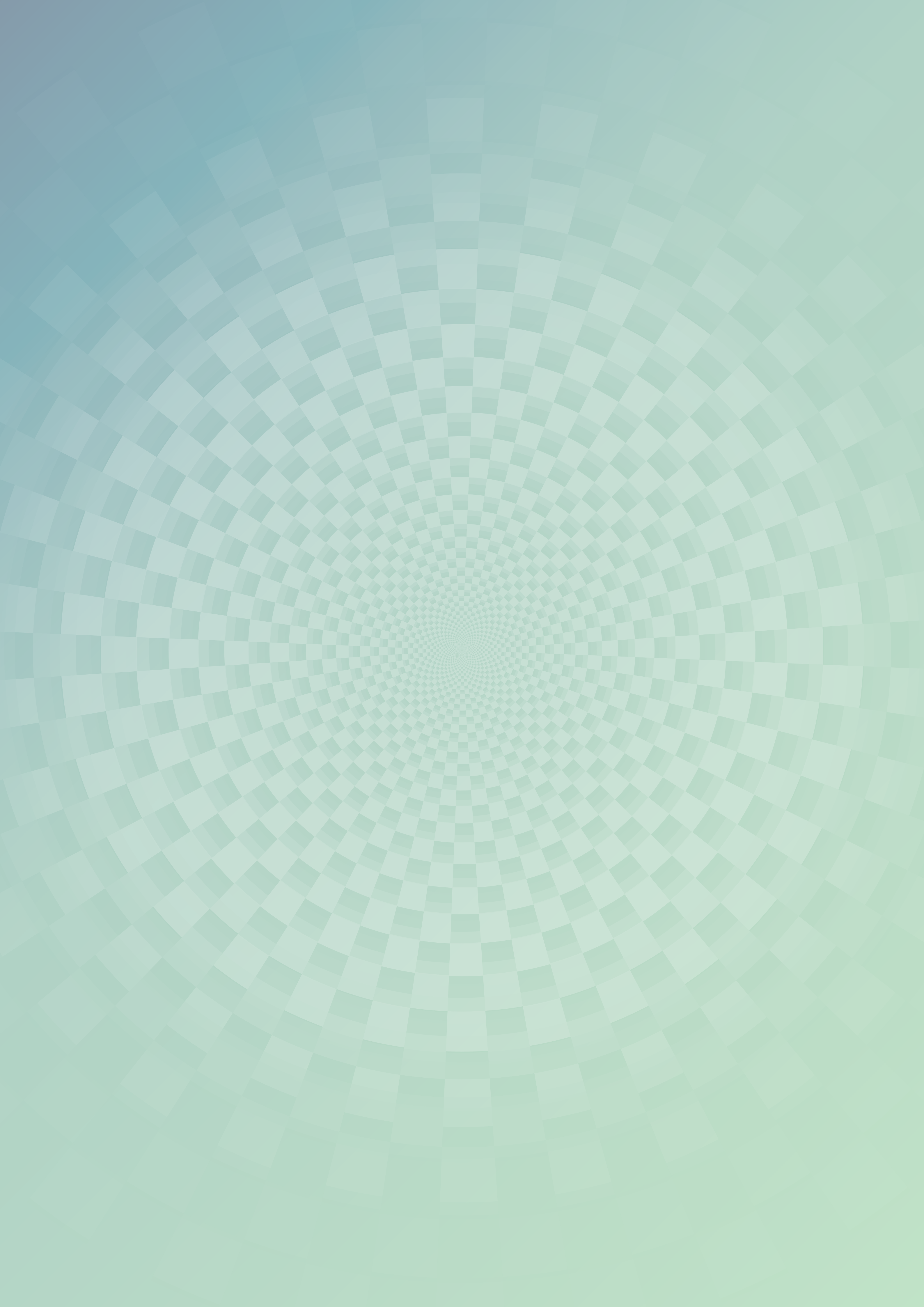
STEPS FOR TRANSFORMATION

Five areas where key steps can accelerate and deepen shifts in the system.

1. **NATIONAL STRATEGIES:** Embed sustainability into long-term road maps for financial reform.
2. **TECHNOLOGICAL INNOVATION:** Channel fintech developments to ensure that they align finance with sustainable development.
3. **PUBLIC FINANCE:** Leverage public finance not only for direct impacts but to pioneer new markets, rules and practices.
4. **RAISE AWARENESS:** Ensure that policymakers and professionals are fully aware of the imperatives and risks, and raise the quality of public debate.
5. **COMMON METHODS, TOOLS AND STANDARDS:** Develop common approaches to integrating sustainability into definitions, tools and standards.

ALIGNMENT OF THE FINANCIAL SYSTEM

FINANCE MOBILIZED FOR SUSTAINABLE DEVELOPMENT



FROM MOMENTUM TO TRANSFORMATION – Highlights

REVISITING THE QUIET REVOLUTION

A 'quiet revolution' is under way in how the financial system is becoming aligned to sustainable development. This was the key finding of the first, two-year phase of the UNEP Inquiry. The Inquiry set out to identify policy and market actions that could be taken *within* the financial system to complement reforms in the real economy and public finance. Launched at the IMF/World Bank Annual Meetings in Lima, Peru in October 2015, the first edition of the Inquiry's global report, *"The Financial System We Need"*,[1] focused particularly on country leadership in innovating the rules governing the financial system, highlighting that:

- ***Increasing efforts are being made to integrate aspects of sustainable development into financial system reform, development and practice,*** in nations as diverse as China and the UK, Bangladesh and France, and Brazil and Kenya, with notable policy and regulatory leadership coming from some developing, as well as developed countries.
- ***Experience points to an emerging toolbox of measures that can support capital reallocation, better risk pricing and market governance, and practices aligned to sustainable development,*** across a range of priorities from air pollution, clean energy and climate change to financial inclusion, rural development and water.
- ***There is potential to scale and systematize these early innovations, both nationally and internationally,*** to effect a major redeployment of capital to finance sustainable development.

Box 1: UNEP Inquiry Knowledge Base

Results were underpinned by over 80 published reports and technical papers, prepared together with more than 60 collaborating institutions including banking associations, research institutions, central banks and financial regulators, finance ministries, civil society and international organizations.

Experience was drawn from 15 diverse country-level contexts and engagements,[2] and included policy and technical reviews across banking, bond markets, insurance, institutional investment and stock exchanges, with focused assessments in areas as diverse as human rights, social banking, fiduciary duty and the changing roles of central banks.

In the first edition of Inquiry's global report, an initial set of over 100 innovative measures were mapped, led by central banks, financial regulators, policymakers and standard-setters, stock exchanges and rating agencies.[3]

The Inquiry's knowledge base can be accessed at *www.unepinquiry.org.*

The Inquiry's findings came at an historic moment rich in potential for major change, underpinned by three interlocking developments:

- ***The landmark adoption of the 2030 Agenda for Sustainable Development and the Paris Agreement on climate change,*** both of which recognized that financing was essential for realizing their goals and remained – on current trends – inadequate.[4]

- ***Policy action following the financial crisis of 2008,*** which sought to improve the efficiency, effectiveness and resilience of the financial system in serving the long-term needs of the global economy.

- ***Rapid evolution of the financial system itself,*** resulting from the combined effects of post-crisis macroeconomic environment and reforms, the increasing influence of emerging and developing countries, new social expectations and the disruptive forces of technology across the financial system.

The Inquiry highlighted ***steps that could be taken to encourage and systematize this growing practice***, noting that action within the financial system could most effectively be built: (a) through collaboration efforts between private and public sectors; (b) involving action at both the national and international levels; and (c) complementing classic sustainable development policies, such as public financing and policies directly impacting the real economy. Key options for making this happen included:

- ***National action:*** national compacts and action plans to build sustainable financial systems provide a foundation for making strategic progress. Such roadmaps would most effectively be designed and overseen by coalitions of key institutions, and driven by national circumstances and priorities, including a diagnostic of practice and needs, an assessment of opportunities, a pathway for action and implementation with strong feedback mechanisms to enable learning and improvement.

- ***International cooperation:*** ten priorities for international cooperation were identified, including: developing principles for a sustainable financial system; reaching convergence on disclosure standards; developing sustainability stress testing methods; optimizing fiscal measures in the financial system; incorporating environmental risks in global banking standards; developing a code on investor duties; establishing a green capital markets coalition; introducing guidance for insurance regulators; and, developing a performance framework for a sustainable financial system.

The UNEP Inquiry's first generation of findings have been widely welcomed and reaffirmed through subsequent developments, with many of the proposed next steps reflected in work-in-progress at both multinational and international levels.[5,6]

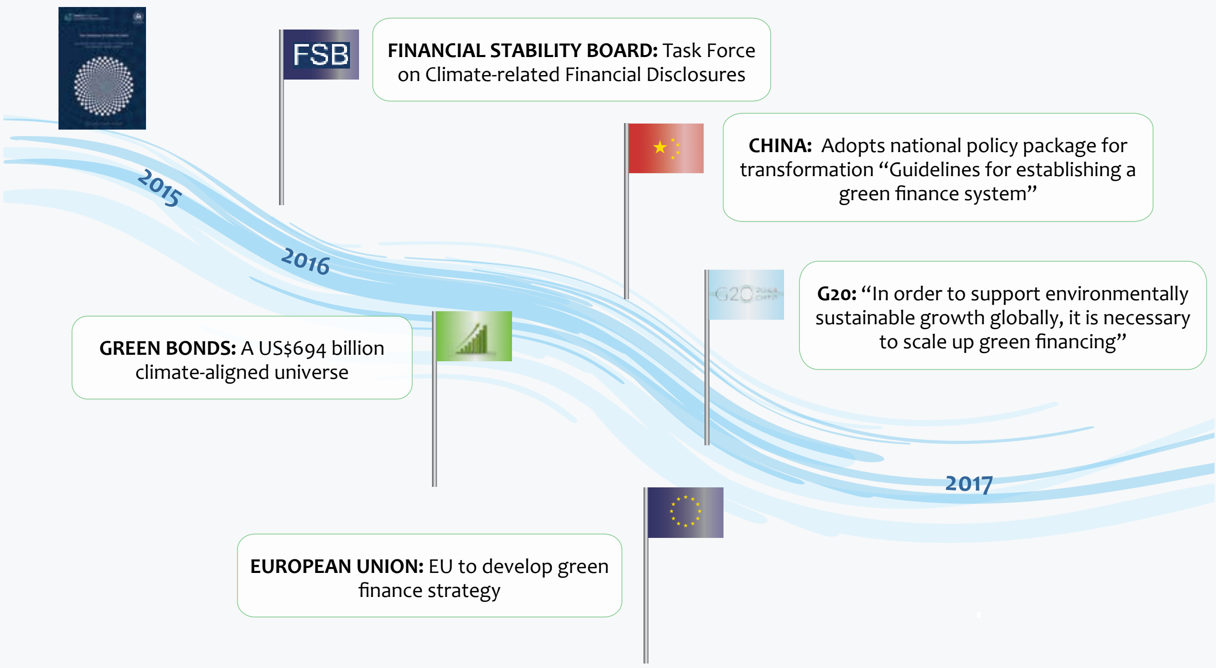
> *"India has a huge opportunity to discuss the policy intervention required to drive the flow of sustainable financing and to align the financial system towards a sustainable development agenda. Several goalposts including creating awareness of the financial sector, developing common definitions of green finance indicators, developing green products, measuring progress and framework for assessing financial risks are critical for achieving this."*[7]
>
> **R. Gandhi,** Deputy Governor, Reserve Bank of India

THE GROWING MOMENTUM

The last year has seen an acceleration in the quiet revolution's momentum across the financial system. Historic circumstances, innovation and leadership have combined to incorporate aspects of sustainable development into financial system design and practice. Progress is being made in different places, at multiple levels and involving diverse actors across three, inter-locking pathways of change: market leadership; national action; and international cooperation.

> *"Meeting the Paris Agreement's goals will require the full mobilization of all stakeholders, including financial sector actors. I fully support efforts to make financial flows consistent with the needed limitation of greenhouse emissions and the financing of climate resilient development."*[8]
>
> **Michel Sapin,** Finance Minister, France

FIGURE 1: HOW THE 'QUIET REVOLUTION' GOT LOUDER



As this momentum has developed, so new dimensions have emerged:

- ***Public debate has advanced.*** Central bank governors, finance ministers and regulators, and finance sector executives are increasingly being asked to explain their contribution to advancing sustainable development. Public interest institutions are playing an increasingly important role in shaping public debate, for example about the risks of 'stranded assets'.[9] Citizens are taking up the opportunities to redeploy their own capital aligned to their values and longer-term interests.

- ***Sustainability is becoming a factor in the competitive development of the world's financial centres,*** with global and regional centres including Hong Kong,[10] Nairobi,[11] London,[12] Paris[13] and Switzerland[14] exploring how best to develop rules, fiscal measures and market leadership to take advantage of new opportunities.

- ***Collaborative networks are multiplying and deepening,*** with a growing trend evident across various jurisdictions to create and institutionalize partnerships, associations and fora for the sharing of best practices, information and experiences.[15] The Inquiry is involved in several of these new initiatives, including the Sustainable Insurance Forum,[16] made up of insurance supervisors and associated with the private sector-focused Principles for Sustainable Insurance,[17] and the Green Infrastructure Investment Coalition.[18]

> *"Green finance is burgeoning, it has reached a point of spontaneous combustion. But it needs to be aligned. It needs to go beyond the leadership of a few champions."*[19]
>
> **Nuru Mugambi,** Director of Communications and Public Affairs, Kenya Bankers Association

BOX 2: TOWARDS A SUSTAINABLE FINANCIAL SYSTEM - PATHWAYS OF CHANGE

- **Market Leadership:** financial institutions and markets are responding to client demand, policy signals, environmental stress, and technology developments with a suite of innovations:
  - *Green bonds:* in many ways the 'indicator species' for new ways of raising sustainable finance, green bonds continued to expand and evolve, with China taking a leading role, along with a rise in issuance from US municipalities.[20]
  - *Stock exchanges:* in the past year, 23 new exchanges committed to improve the disclosure of sustainability factors on their markets, from Amman, Casablanca and Dubai to Mexico, Luxembourg and Oslo.[21]
  - *Rating agencies*: six of the world's leading credit rating agencies – S&P Global Ratings, Moody's, Dagong, Scope, RAM Ratings and Liberum – made a public commitment to collaborative action on sustainability in an initiative with institutional investors.[22]
  - *Environmental risk assessment:* experimentation has evolved quickly, with China's ICBC, the world's largest bank, publishing the first 'new generation' environmental stress test, focused on the implications for its loan book of chronic air pollution, as part of China's green finance efforts.[23]
- **National Action:** policymakers and regulators at the national and sub-national levels are taking steps to support and often stimulate this process, introducing measures to promote capital reallocation, improve risk management, enhance reporting, as well as clarify the responsibilities of financial institutions. Our survey of measures identified 217 measures taken in nearly 60 countries by mid-2016, with emerging and developing countries increasing their share from 29% of the total in 2010 to 38% by the end of 2015. Over the past year, notable developments include:
  - *China* has introduced a comprehensive set of guidelines to establish a green financial system, including for banking, capital markets, insurance, local finance and international cooperation.[24]
  - *California* has required insurance companies to report on holdings in high-risk carbon assets.[25]
  - *France's* implementation of new reporting requirements for corporate, as well as more specific reporting from institutional investors, and ongoing work on the assessment of climate-related risks in the banking sector are a key part of its low-carbon transition strategy.[26]
  - *India's* securities regulator has introduced green bond requirements to boost financing, particularly for renewable energy.[27]
  - *Italy* has launched a national dialogue on sustainable finance, exploring options across banking, capital markets, investment and insurance.[28]
  - *Kenya* is building on its global leadership in promoting financial inclusion by developing a plan to mobilize green finance and position itself as a regional hub.[29]
  - *Morocco* is developing green finance roadmaps for banking, capital markets and insurance.
  - *The Netherlands* central bank has assessed the implications of climate change for its financial system.[30]
  - *The Philippines* has developed a public-private disaster insurance pool that will make disaster insurance compulsory for homeowners and SMEs.[31]
  - *The UK* has advanced work on the prudential implications of climate change for the insurance sector.[32]
- **International Cooperation:** most significant in the last year has been the step change in international cooperation around finance and sustainable development. Concerns which are of particular importance to developing countries have continued to grow in visibility, including financial inclusion, foreign direct investment, and the potential for quantum advances to be made through the adoption of financial technology.[33]
  - *G20 and green finance*: China, as part of its G20 Presidency, launched the Green Finance Study Group, co-chaired by the People's Bank of China and the Bank of England, with UN Environment as the secretariat.[34]
  - *Financial Stability Board (FSB) and climate change*: the FSB launched its Task Force on Climate-related Financial Disclosures in December 2015 in response to a G20 request.[35]

Public finance is increasingly understood as having a diverse range of impacts on the deployment of private capital for sustainable development. The Inquiry's primary focus has been on measures to harness private capital within the financial system. But our experience at the country level has shown that it is hard to separate the strategic role of public finance as a lever of change. The use of public finance to 'crowd-in' private finance is now widely accepted as an effective approach to finance some public services and infrastructure. At a time of increased fiscal stringency, it also makes sense to review that the incentives and subsidies flowing through the financial system – for example, tax relief on debt, savings and pensions – are aligned with sustainable development.[36] Public financial institutions can and do support the creation of new markets within the financial system, with the emergence of green bonds being the leading example, pump-primed by development banks (closely followed by sub-sovereigns) issuance. Sustainable development-related criteria could also be applied to the public procurement of financial services or to central bank asset purchase programmes (including so-called 'quantitative easing'). Public financial institutions can also pioneer new sustainability rules and practices, which can then be adopted by the private financial sector.

"We always overestimate the change that will occur in the next two years and underestimate the change that will occur in the next 10. Don't let yourself be lulled into inaction."[37]

Bill Gates, Co-Chairman of the Bill and Melinda Gates Foundation

The global financial system is in constant flux, disrupted in part by its changing technological characteristics. Advancing sustainable financing can and should seek to leverage ongoing disruptions to the financial system and the real economy. Financial technology, or 'fintech', is a case in point.[38] Fintech is allowing savers and investors to make more refined choices as to how to allocate their funds, thereby widening opportunities for the incorporation of sustainability factors. Peer-to-peer lending and crowd-sourcing are already opening new funding avenues for employment-generating small and medium-sized enterprises (SMEs). In addition, they increase the prospects for larger-scale financing for sustainable investments to be mobilized directly from domestic savers in developing countries, with major potential cost reductions.

"There is an opportunity for the G20 to create practical green financing models for the developed and the developing world. The good news is there is an abundance of capital globally, but governments need to create the proper conditions to attract this capital. They have an important role to play in setting the policies, regulations, incentives, and in ensuring that they are enforced - (...) Global capital markets are powerful forces. Directed properly, they can alleviate the burden on governments and unlock a sustainable economic future."[39]

Henry (Hank) M. Paulson, Jr., Chair, Paulson Institute

Measuring the performance of the financial system in terms of sustainable development is also becoming a driver of change. Increasingly policymakers, financial institutions and citizens are seeking to assess the contribution of the financial system to sustainable development. To do this, three core performance characteristics need to be evaluated:

- **Effectiveness** – the degree to which the market prices sustainability factors into financial asset values (sometimes called 'allocative efficiency').
- **Efficiency** – the costs of running the financial system that delivers financial flows aligned with sustainable development.
- **Resilience** – the susceptibility of the financial system to disruptions related to unsustainable development, such as water scarcity, air pollution or climate change, including transition risks.[40]

Our initial work in developing such a framework has drawn on current financial system performance measurement, and has focused on the architecture of rules, the practice of market behaviour, as well as the quantitative stocks and flows of finance towards sustainable assets – and away from assets that degrade natural capital. This has been applied to 20 developing, emerging and developed countries – with key insights emerging on overall system governance, stock exchanges and debt capital markets. Major data gaps remain, which prevent comparative analysis from acting as a driver of improvement.

MOMENTUM IS NOT ENOUGH

Achieving the 2030 Agenda for Sustainable Development and the Paris Agreement requires an unprecedented mobilization of both public and private finance, some US$90 trillion over the next 15 years.[41,42,43] Progress has been made in mobilizing both public and private finance aligned to sustainable development. Current levels of financing for sustainable development, however, remain wholly inadequate. UNCTAD estimates that there are major financing shortfalls across most efforts to address the Sustainable Development Goals, as much as US$2.5 trillion annually for developing countries.[44] The celebration of recent successes should not cloud the fact that we are not yet close to the goal contained within the Paris Agreement of "making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development".[45] The next five years are crucial to get this capital reallocation under way.

FIGURE 2: THE CHALLENGE IS SCALE AND SPEED

TRANSFORMATIVE CHANGE NEEDED IN ECONOMY

THE GLOBAL GOALS
For Sustainable Development

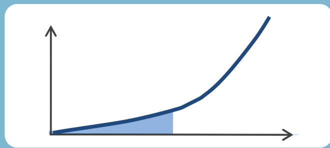
- **One third** of the world´s arable land jeopardized by land degradation.
- **Half** of largest aquifers beyond sustainability tipping point.
- **17%** of the world´s population lack access to electricity.

MOBILIZING FINANCE IS CRITICAL

US$90 TRILLION
OVER 15 YEARS

- **US$260 billion** annual investment gap in agriculture in developing countries.
- **US$600 billion** needed in green investment in China; only 15% from public sources.

SUSTAINABLE FINANCE NEEDS TO SCALE



- **Only 5-10%** of bank loans are "green" in countries where measured.
- **Less than 1%** of total bond issuance is made up of labelled green bonds.

Current efforts to align the financial system with sustainable development are exemplary – but still a work-in-progress. Many innovations are by definition new – and rapid growth is starting from a low base. Most have yet to be fully implemented or institutionalized, and little is known as to which innovations, often in combination, are most effective. With reference to the environment, only 5-10% of bank loans are 'green' as reported in the few countries where any measures are available.[46] Despite the rapid expansion in the green bond market, much less than 1% of total bond issuance is made up of labelled green bonds.[47]

Structural constraints continue to hold back market leadership, including pervasive negative externalities, information asymmetries, misaligned incentives and

Box 3: The Urgent Need to Accelerate Action

- Natural capital has declined in 116 out of 140 countries.[48]
- 6.5 million premature deaths result every year from air pollution linked to the energy system.[49]
- Greenhouse gas emissions add energy to the Earth's system at a rate equivalent to the detonation of four nuclear bombs every second.[50]
- 2015 surpassed 2014 as the hottest year on record due to the combined influence of long-term global warming and an exceptionally strong El Niño event.[51]
- An average of 26.4 million people have been displaced from their homes by natural disasters every year since 2008 – equivalent to one person every second.[52]
- One-third of the world's arable land is jeopardized by land degradation, triggering economic losses of US$6.3 to US$10.6 trillion per year.[53]
- 21 of the world's 37 largest aquifers have passed their sustainability tipping point.[54]

short-termism.[55] Only a minority of countries have taken any action so far to introduce measures to align their financial systems with aspects of sustainable development. None to date have put in place a fully comprehensive approach, and even the most evolved plans, such as in China, are only in their early stages of implementation.

A failure to scale up the current momentum allows for continued investments in an unsustainable development pathway, with associated negative and often irreversible effects such as accelerated climate change. Furthermore, it allows the build-up of systemic risks to financial markets through the perpetuation of mispricing. Finally, it delays the reallocation of finance needed to stimulate the next generation of economic output and incomes in countries across the world.[56]

Despite the positive momentum, we risk slipping backwards if the bulk of financing continues to flow towards unsustainable production and consumption patterns. Without a more rapid, scaled redeployment of financing, we will lock in development trajectories that hinder the realization of the global goals and take us beyond the tipping points for life-supporting climate and wider ecosystems.

"Leadership must come from the private sector, business community and NGOs, not only from the officials. We need a comprehensive and coherent framework supported by political will that enables market forces to move businesses from the traditional to the green economy."[57]

Mohammed Omran, Chair, Egyptian Stock Exchange (EGX)

RENEWING THE PURPOSE OF THE FINANCE SYSTEM

Moving from today's momentum to tomorrow's transformation is not just about doing more of the same. Finance is not consumed for its own sake but exists to serve other purposes. The core purpose of the financial system has always been to serve the real economy – providing a range of core services for households, enterprises and public authorities. Now, the transition to sustainable development is reframing this historic relationship, setting in motion a powerful new dynamic between the real economy and the financial system, focused on delivering inclusive prosperity, poverty elimination and respect for planetary boundaries. Looking across the range of policy and regulatory measures that are driving this dynamic, five priority areas stand out: capital reallocation; risk management; the responsibilities of financial institutions; reporting and disclosure; and national roadmaps for sustainable finance (the '5R's).

Focusing on purpose drives a re-evaluation of the system itself. Progressing to a clean energy future is not, for example, simply a matter of more wind turbines and solar panels, although further technological innovation and large-scale deployment will certainly be needed. A clean energy future will require new market actors, new kinds of market relationships matching supply and demand, different ownership configurations for key parts of the energy system, and a radical overhaul of energy governance at every level.[58]

Similarly for finance, Zhou Xiaochuan, Governor of the People's Bank of China, explains that, "in China, establishing a green finance system has become a national strategy", exactly because of the need to finance profound changes in China's economy over the coming decades.[59] Likewise, Mark Carney, Governor of the Bank of England, has argued that, "achieving the SDGs will require mainstream finance. We need to build a new system – one that delivers sustainable investment flows, based on both resilient market-based, and robust bank-based, finance."[60]

BUILDING ON THE UNDERLYING DYNAMICS OF CHANGE

Shifting from incremental change to transformation can be understood to occur in three stages.[61] First-order changes are 'paradigm maintaining', in that they adjust policy without challenging the existing, underlying assumptions about the way things are. Second-order changes are more significant, where the instrument of a policy is adjusted, but not the overarching policy. Third-order change sees the emergence of new norms, orthodoxies and worldviews.[62]

Moving from lower to higher orders of change often happens through the convergence of seemingly marginal and incremental mainstream developments. Green bonds, for example, reflect the extended application of existing market architecture, but have placed the broader aim of 'greening the bond market' firmly on the agenda, engaging credit rating agencies and regulators. One of the unintended consequences of unconventional monetary policy and the resulting low-interest rates has been a search for yield by institutional investors, which is drawing their attention to green assets. Mainstream investors, insurers and banks embracing 'responsible', 'sustainable' or 'low-carbon' financing are converging in their use of metrics with players previously on the margins such as impact investors[63,64] and social banking pioneers.[65] Broadened interpretations of pension funds' fiduciary responsibilities[66] are looking increasingly like more avant-garde innovations in corporate governance such as the 'B Corporation' legal forms.[67] Innovators within central banks, in highlighting the complex dynamic between climate change and financial stability, are both deepening conventional practice and signalling the need for an alignment of their mandates with longer-term policy goals.[68]

Such dynamics can be particularly powerful in developing countries where financial systems, governance and economies are in such rapid change. Some developing countries have demonstrated international leadership in aligning financial systems with sustainable development. While the degree of visible urgency partly explains this, there are other, underlying reasons that set conditions for more rapid change. Less developed financial systems can allow for more rapid, and at times innovative, changes. Fintech may well enable developing countries to leapfrog some of the traditional steps in developing capital markets, as they have already demonstrated in the pace of adoption of mobile payment systems. The separation of policy and financial system regulatory aims and processes is less accepted and institutionalized in most developing countries, allowing for more integrated planning and action.

STEPS TOWARDS TRANSFORMATION

A new sense of how financial systems are evolving towards sustainability is now emerging. There is a growing interest in the strategic renewal of the underlying purpose of the financial system, re-framing its core role in serving the long-term needs of the real economy – one that must be inclusive and environmentally sustainable. Such interest is far from theoretical. On the contrary, it reflects the combination of perceived need, disappointment and experimentation that has driven today's momentum. This momentum has created a vibrant dynamic that is extending across the financial system as a whole, summarized as having seven dimensions:

1. ***Shifting the financial system can deliver sustainable development outcomes:*** early evidence shows that financial system reform can support sustainable development in the real economy.
2. ***Aligning institutional purpose and mandate:*** financial rule-makers such as central banks and regulators are reinterpreting their mandates to take account of sustainable development.
3. ***Co-evolution of market leadership and policy alongside regulatory innovations:*** market innovation and policy, and regulatory actions emerge not as substitutes, but rather can co-evolve into a mutually reinforcing relationship.
4. ***National leadership drives international cooperation:*** national leadership at this stage is proving to be a powerful driver of – and is arguably a precondition for – action at the international level.
5. ***Public finance and market design:*** direct public financing plays a critical role in delivering sustainable development, as well as in market creation (such as green bonds) and rule-making.

6 ***Technological innovation and sustainable finance:*** the links between fintech and sustainable development highlight the powerful technological forces that will reshape the financial system.

7 ***System performance and public expectations:*** there are growing public expectations that the financial system could play a more constructive role in delivering on sustainable development.

Such emergent dynamics need to be amplified and focused into a transformational force. That more needs to be done is not a matter of optimism or pessimism. It is simply a recognition that there are no guarantees that today's momentum will turn into tomorrow's transformation. In considering the drivers, the nature of the momentum and the system dynamics, the Inquiry would like to highlight five related activity areas that, if effectively taken over the period to 2020, could deliver the needed transformation:

1 ***Anchor sustainability in national strategies for financial reform and development:*** action to develop sustainable financial systems is more coherent and effective where there is a comprehensive, long-term plan or roadmap. Each country is different – and already there is a diversity of approaches, with a mix of policy-led, market-led and public-private initiatives under way.

2 ***Channel technological innovation to finance sustainable development:*** technological opportunities, particularly fintech, need to be leveraged to ensure that they serve to align finance with sustainable development.

3 ***Realize the triple leverage potential of public finance:*** public finance must play a three-fold role in mobilizing private capital for sustainable development – providing financial support through funding and incentives, helping to creating new sustainable finance markets and pioneering new sustainability rules and practices.

4 ***Raise awareness and build capabilities across the system:*** enabling the financial community to effectively implement plans, including taking advantage of new opportunities, ensuring that policymakers and regulators are fully aware of the imperatives and risks, and raising the quality of public debate by ensuring it is better informed and activated as an enabler of change.

5 ***Embed sustainability into common methods, tools and standards:*** a striking evolution in awareness over the past year is the realization by a growing number of standard-setting and oversight bodies of the relevance of key aspects of sustainable development to their core business. There is now an opportunity to realize the latent synergies that exist in evolving a more systematic approach, notably in the development of common approaches to definitions, tools and standards to remove barriers to the expansion of sustainable financial practice.

"I believe that the financial sector as a whole has a generational opportunity to build sustainable capital markets."[69]

Mark Wilson, CEO, Aviva

A MATTER OF CHOICE

Aligning the financial system with sustainable development is ultimately a choice. Progress is being made within existing regulatory mandates by exposing and more effectively managing risk at the project and enterprise level and for the financial system as a whole. Certainly such progress can be extended by applying a 'risk lens' over longer-term horizons and taking account of an ever-broader set of drivers.

Beyond this, however, alignment is a policy decision. In fact, such choices have already been made in broad policy terms. The Sustainable Development Goals, the Sendai Framework for Disaster Risk Reduction and the Paris Agreement reaffirm the centrality of sustainable development in underpinning viable and inclusive economic strategies and practices. These policy decisions could now be translated into the mandates of relevant governing institutions within the financial system. This includes those responsible for stewarding the development of the financial system, whose primary task is to maintain orderly and stable – but also vibrant and effective – financial and capital markets. Combined with smart public financing, financial market leadership, and active public debate, the opportunity now exists to drive forward transformational financing for sustainable development.

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