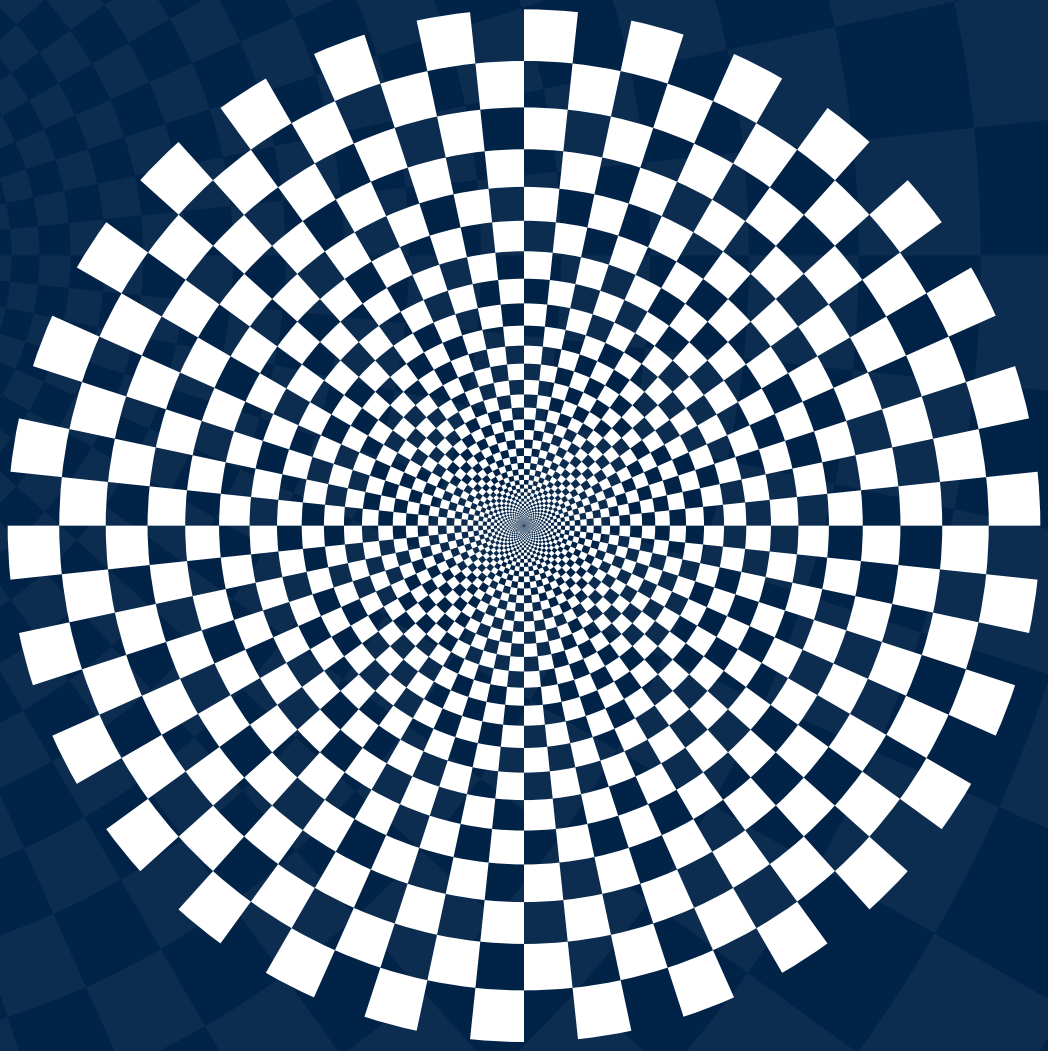
**Inquiry**: Design of a Sustainable Financial System

UNEP

# THE FINANCIAL SYSTEM WE NEED

## ALIGNING THE FINANCIAL SYSTEM WITH SUSTAINABLE DEVELOPMENT



THE UNEP INQUIRY REPORT

OCTOBER 2015

## The Inquiry

The Inquiry into the Design of a Sustainable Financial System has been initiated by the United Nations Environment Programme to advance policy options to deliver a step change in the financial system's effectiveness in mobilizing capital towards a green and inclusive economy – in other words, sustainable development. Established in January 2014, it is publishing its final report in October 2015.

More information on the Inquiry is at: www.unep.org/inquiry and www.unepinquiry.org or from:

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## Acknowledgements

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# Foreword

The financial system underpins growth and development. In 2008 we witnessed some of the world's most sophisticated financial systems spawn the worst global financial crisis seen in decades. As markets in some developed countries collapsed, others in both developed and developing nations were inevitably dragged down. In the wake of this global financial crisis, recognition has grown that the financial system must be not only sound and stable, but also sustainable in the way it enables the transition to a low-carbon, green economy. Therefore to achieve the sustainable development we want will require a realignment of the financial system with the goals of sustainable development.

Aligning the financial system for sustainability is not some far-off notion, but is already happening. A "quiet revolution" is taking place as policy makers and financial regulators address the need to forge robust and sustainable financial systems for 21st century needs. Concepts such as natural wealth and the circular, green economy have moved from the margins to become the substance of economic strategies and policies for businesses and nations. Clean energy will underpin tomorrow's global energy system and there is little doubt that the challenge, although considerable, is essentially one of transition.

With this in mind, UNEP established the Inquiry into the Design of a Sustainable Financial System, mandated to explore options for aligning the financial system with sustainable development, and guided by an international Advisory Council.

The Inquiry's findings and proposals for action drawn from its work through dozens of partners both at the national and international level, indicate that the financial system can be transformed to better serve the needs of sustainable development. Moreover, the Inquiry has highlighted the simple truth that such a transformation is essentially a matter of public choice – a positive choice that is being made in an increasing number of countries and across a growing portion of the financial system.

Progressing the alignment of the financial system with sustainable development will involve new actors, coalitions and instruments. Whilst much remains to be done, we believe that UNEP's Inquiry has established a grounded appreciation of the practical potential, and of the policy choices that can be made in setting out to realizing that potential.

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Former Chair, Financial Services Authority, UK

* indicates an Inquiry Advisory Council member

# Advisory Council Commentary

Recognition is growing of the pressing challenge of financing sustainable development, and the opportunity it offers for channeling financial capital to productive, profitable and more broadly beneficial uses. Making this happen needs financial and capital markets to be aligned to sustainable development outcomes, the topic taken on by the United Nations Environment Programme's Inquiry into the Design of a Sustainable Financial System.

As Advisory Council members, we share a commitment to connecting the agendas for financial reform and sustainable development. We have provided guidance to the Inquiry in its approach to its work, the assessment of its findings, and the implications for action. Our engagement has been collective as well as through advice and active collaboration of individual Council members. Our diverse backgrounds and perspectives have enriched the Inquiry's ultimate report, as well as reflecting differing views on some specific aspects of the analysis and proposals. Reflecting on the Inquiry's almost two year journey, of greatest significance is that it has opened up a new arena in efforts to secure adequate financing for sustainable development, notably by:

- Chronicling emerging leadership in including sustainability factors in the policies, regulations, standards and norms that govern the financial system.
- Building a baseline from which policymakers can work to achieve wider adoption of emerging good practice.
- Helping to build a growing community of practitioners focusing on these linkages.

The Inquiry's specific findings and associated proposals effectively establish a foundation for action to be taken – both amplifying and systematizing high potential measures, pointing the way towards further areas for knowledge development, and opening the way to new approaches to learning for both developing and developed countries and international cooperation. This report's key insights sum up the bottom line, that it is possible and indeed necessary to improve key parts of the financial system for it to more effectively serve the purpose of supporting the transition to an inclusive, green economy.

The Advisory Council sees the Inquiry's global report not as the end of a process, but as a launch pad for the continued development of this field of analysis and action. Much remains to be understood, tested and elevated to the broader road map for tomorrow's financial and capital markets. We hope that the Inquiry's grounded, collaborative approach is one that can be carried forward to ensure that further developments happen in practice.

UNEP, finally, is to be congratulated in establishing this Inquiry into the Design of a Sustainable Financial System. Building on its earlier sustainable finance and green economy work, UNEP has demonstrated its commitment to exploring new fields of action for advancing sustainable development.

# The Financial System *We Need*

## Inquiry
GLOBAL REPORT

# Contents

*A supplementary annex is available on the Inquiry website with a glossary and bibliography.*

## FIGURES

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# Inquiry in Brief

**Financing for sustainable development** can be delivered through action within the financial system, as well as the real economy.

**Policy innovations from developing and developed countries** demonstrate how the financial system can be better aligned with sustainable development.

**Systematic national action can now be taken** to shape a sustainable financial system, complemented by international cooperation.

## 1. HARNESSING THE FINANCIAL SYSTEM

*Our economies, societies and environment are inextricably linked.* Challenges in one sphere invariably echo in others. Immense environmental challenges increasingly imperil lives - and livelihoods - across the globe. Yet solutions, too, straddle economic, social and environmental dimensions. And support for integrated responses to the most difficult problems has never been greater. The international consensus on the Sustainable Development Goals and the 2030 Agenda has highlighted the imperative to act on the major challenges issues of our time, and to find the sustainable pathways that will support long-term solutions to these challenges.

*The full potential of the financial system needs to be harnessed to deliver the transition to sustainable development.* Whilst the effects of the 2008 financial crisis continue to haunt the global economy, an unprecedented recognition has emerged of the need to shape a financial system that is both more stable and more connected to the real economy. Now a new generation of policy innovation is aiming to ensure that the financial system serves the needs of inclusive, environmentally-sustainable, economic development. These innovations in financial and monetary policies and regulations, along with wider market standards are creating a critical nexus between the rules that govern the financial system and sustainable development. The United Nations Environment Programme (UNEP) *Inquiry into the Design of a Sustainable Financial System* has been established to explore this nexus and formulate options for aligning the financial system with sustainable development.

> "From India onwards, all developing countries will have to industrialize without recourse to growing fossil fuel consumption. No country has done this. Innovations are needed in every kind of financial market."
>
> Rathin Roy, Director, National Institute of Public Finance and Policy, India[3]

### FINANCING SUSTAINABLE DEVELOPMENT

*Financing sustainable development will require capital flows to be redirected towards critical priorities and away from assets that deplete natural capital.*[1] Recent decades have seen progress in the integration of sustainability factors into financial decision-making along with shifts in capital deployment, for example towards clean energy. But environmental deterioration is continuing. Natural capital is declining in 116 out of 140 countries and at current rates, these trends are expected to further erode global natural wealth by over 10% by 2030, causing considerable human harm, threatening development models, and damaging irreversibly, in some instances, vital life support systems.[2]

*The international consensus on the Sustainable Development Goals and the 2030 Agenda has underscored the imperative to find pathways that support long-term solutions to these challenges. Investment estimated at US$5-7 trillion a year is needed to realize*

*Sustainable development requires changes in the deployment and relative value of financial assets and their relationship to the creation, stewardship and productivity of real wealth.*

*A sustainable financial system is therefore one that creates, values and transacts financial assets in ways that shape real wealth to serve the long-term needs of an inclusive, environmentally sustainable economy.*

## Inquiry-In-Action

The United Nations Environment Programme (UNEP) Inquiry into the Design of a Sustainable Financial System was established in early 2014 to explore how to align the financial system with sustainable development, with a focus on environmental aspects.

**Inquiry's 3 Core Questions**

- ***Why*** **–** under what circumstances should measures be taken to ensure that the financial system takes fuller account of sustainable development?
- ***What*** **–** what measures have been and might be more widely deployed to better align the financial system with sustainable development?
- ***How*** **–** how can such measures best be deployed?

The Inquiry has considered aspects of financial and monetary policies and financial regulations, and standards, including disclosure requirements, credit ratings, listing requirements and indices. The Inquiry has focused on the roles of financial system's rule-makers including central banks, financial regulators, finance ministries, other government departments, standards institutions, and market-based standard-setters such as stock exchanges, and key international organizations and platforms.

The Inquiry has explored innovative experiences in advancing sustainable development through the actions of the financial system's governing institutions, notably central banks and financial regulators, government bodies and standard setters. Such experiences have been examined in some depth in Bangladesh, Brazil, China, Colombia, the European Union, France, Kenya, India, Indonesia, the Netherlands, South Africa, Switzerland, the UK and the USA.

The Inquiry has also drawn on extensive international engagement and research on topics as diverse as green bonds, value-based banking, fiduciary responsibilities, human rights and electronic trading (a full list of research papers is included in Appendix IV). A high-level Advisory Council has guided the Inquiry, which has also drawn on UNEP's green economy activities[4] and its Finance Initiative (UNEP FI).[5]

The Inquiry has contributed to a growing number of real-time initiatives seeking to integrate sustainable development with the evolution of financial and capital markets, from co-convening China's Green Finance Task Force with the People's Bank of China to catalyzing and supporting the Swiss Government in launching a national consultation with the Swiss Sustainable Finance Initiative. Other activities include supporting a national inquiry into the green economy and the financial system by Brazil's banking association, the Federação Brasileira das Associações de Bancos.

*the Sustainable Development Goals, including infrastructure, clean energy, water and sanitation and agriculture.*[6] Developing countries face an annual investment gap of US$2.5 trillion, while on current trends major economies face a long-term investment deficit of US$10 trillion annually by 2020.[7] Likewise, some investments need to be scaled back, for example, by an estimated US$6 trillion by 2030 in high polluting energy development and power generation.[8] One part of this capital switch will be the reform of resource pricing, for example, to respond to the US$5.3 trillion in annual energy subsidies identified by the International Monetary Fund.[9]

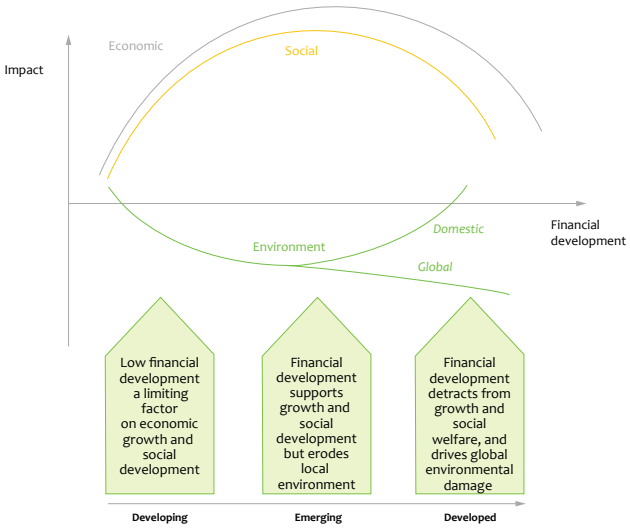
Public finance will be critical to closing the financing gap, but estimates suggest this contribution will be limited. Finance needs to access private capital at scale, with banking alone managing financial assets of almost US$140 trillion and institutional investors, notably pension funds, managing over US$100 trillion, and capital markets, including bond and equities, exceeding US$100 trillion and US$73 trillion respectively.[10]

*The financial system will need to evolve to play its role in financing sustainable development. Billions of people and millions of small businesses lack access to financial services.* Reforms in the wake of the financial crisis have improved financial stability, but remain an "unfinished business". Short-termism and excessive leverage remain significant drivers of instability and reasons why longer-term sustainability-related risks are being sidelined in financial decision-making. Replicating today's most developed financial systems is not the answer. Indeed, over-sized, over-complex financial systems, can negatively impact economic growth and income equality.[11]

*Environmental and social outcomes will be impacted by financial system development.* Adopting the IMF and BIS's schematic approach, a working hypothesis is that a business-as-usual scenario will see negative environmental outcomes increase rapidly as financial systems develop. Such externalities might reduce at higher levels of development for their respective domestic, host economies, but continue to rise globally as more developed financial systems increasingly internationalize their financing and footprint.

*There is an historic window of opportunity to develop a sustainable financial system.* Across the world, the value of capital committed to more responsible financial practices is growing. Policy and regulatory responses to the crisis demonstrate the will and capacity of governing institutions to act in unconventional ways, rapidly, at scale and in a concerted fashion, when faced with serious, systemic challenges.[12] The growing influence of emerging economies in international financial affairs places the linkage between financial market development and national development priorities more centrally in the policy debate. Technology disruption across the financial system is challenging incumbent practices across the world of financial intermediaries, opening new avenues for inclusion and connectivity.[13] Finally, a transformation in public and policy awareness of sustainable development has placed environmental and social issues increasingly at the heart of economic policymaking.

FIG 1 FINANCIAL SYSTEM MISALIGNMENT WITH SUSTAINABLE DEVELOPMENT



# Emerging Practice in Embedding Sustainable Development into the Financial System

## ENHANCING MARKET PRACTICE

- **Reporting for equities:** The Johannesburg Stock Exchange (JSE) and Brazil's BOVESPA stock exchange were two of the earliest innovators in requiring sustainability disclosures.[14]
- **Sustainability information in market analysis:** Standard & Poor's Ratings Services identified climate change as a key mega-trend effecting sovereign bonds.[15]
- **Integrating environmental risks into financial regulation:** Brazil's banking regulations require socio-environmental risk management.[16]

Inquiry *in Brief*

## UPGRADING GOVERNANCE ARCHITECTURES

Internalizing sustainable development into financial decision-making can be consistent the existing mandates of financial regulators and central banks:[17,18]

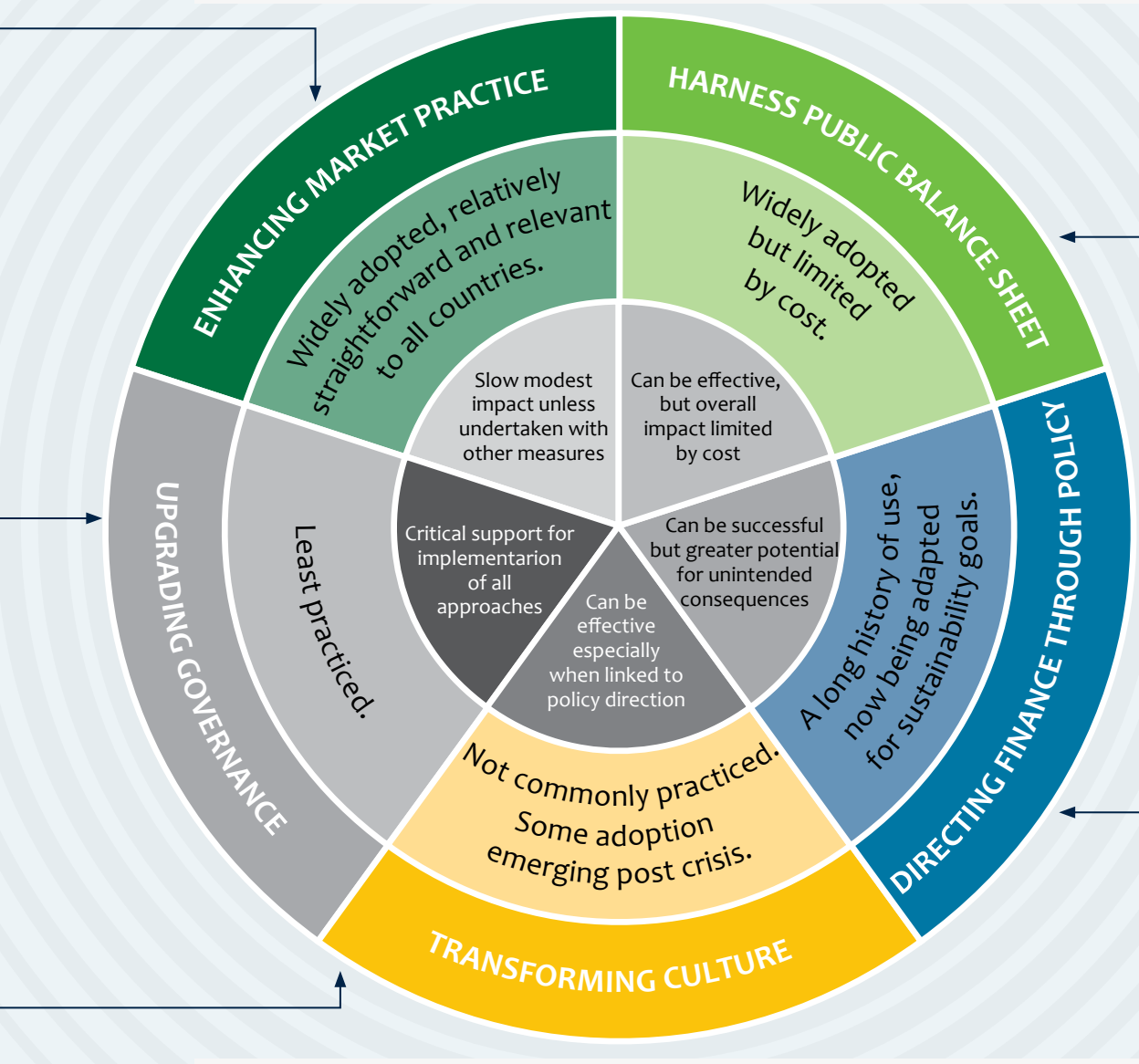
- The Central Bank of Brazil's focus on socio-environmental risk management flows from its core functions as a prudential bank regulator.
- The Bangladesh Bank argues that its support for rural enterprises and green finance contributes to financial and monetary stability.
- The Bank of England's prudential review of climate risks to the UK's insurance sector is based on a connection between its core prudential duties and the UK Climate Change Act.

## ENCOURAGING CULTURAL TRANSFORMATION

- **National compacts and road maps:** South Africa's financial charter, China's Green Finance Committee,[19] the Swiss Sustainable Finance initiative.[20]
- **Values-based finance institutions:** Dutch bankers pledge to balance the interests of all stakeholders.[21] Impact investing, and faith-based finance continue to grow.[22]
- **Action to enhance the current skill set of financial professionals and regulators:**[23] Indonesia's Sustainable Finance Roadmap focuses on sustainability skills of professionals.[24]

## HARNESSING THE PUBLIC BALANCE SHEET

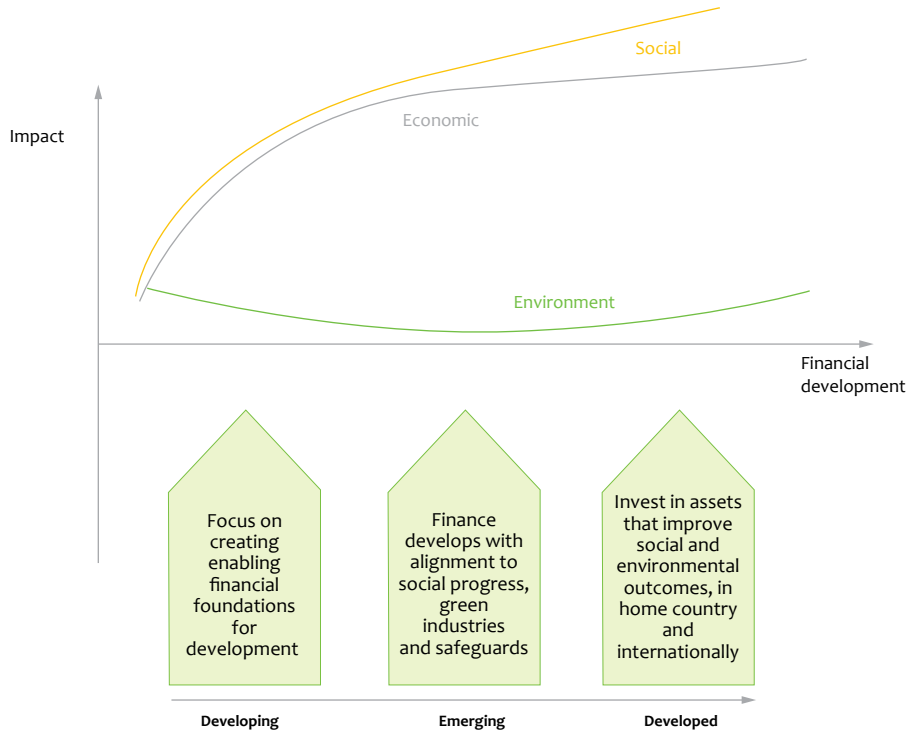
- **Fiscal incentives for investors:** Widely used in the US, from tax relief on municipal bonds for local infrastructure to incentives targeted at renewable energy investments.
- **Blended Finance:** Many public financial institutions are combining public and private finance to close the viability gap for investors in green projects.[25]
- **Central banks:**[26] The People's Bank of China making equity investments in policy-directed investment vehicles.[27]



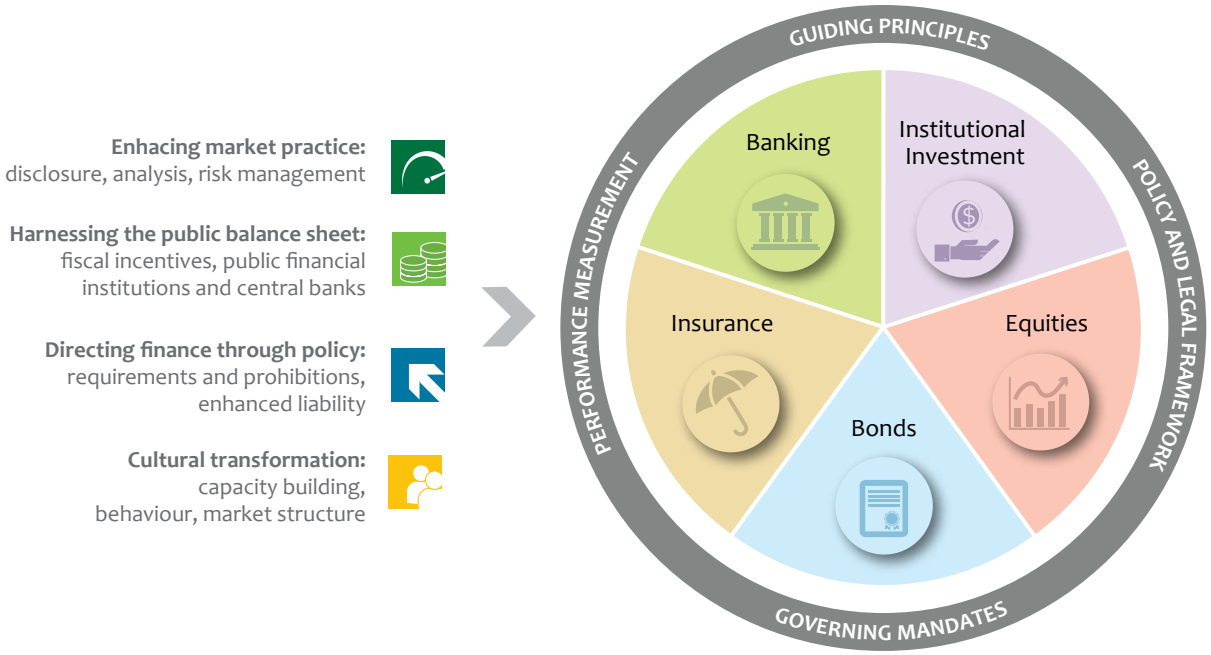

## DIRECTING FINANCE THROUGH POLICY

- **Priority sector lending programmes:** From India's priority sector lending requirements[28] and the US Community Reinvestment Act.
- **Directed finance is often linked to incentives:** Bangladesh Bank's green finance lending requirements have favourable capital adjustments[29]. Implementation of South Africa's Financial Charter is connected to public procurement.[30]
- **Liability regimes:** The US 'superfund' system provides 'safe harbours' for lender liability based on adequate due diligence. China is reviewing its rules on lender liability.[31]

## Fig II Developing a 21st Century Financial System




## Fig III Toolbox-from-Practice and Policy Package Options



## 2. QUIET REVOLUTION

*The Inquiry's core finding is that there is a "quiet revolution" seeking to integrate sustainable development into the fabric of the financial system.* The Inquiry found over 100 examples of policy measures across 40 countries targeting each of the main asset pools and actors, as well as the underlying governance of the financial system. Developing and emerging economies are leading this revolution, driven by a focus on economic transformation, social inclusion and local environmental priorities. Champions are also emerging in the developed world, driven more by market efficiency and stability concerns, and in response to global risks such as climate change. International cooperation is growing rapidly, catalyzing learning and shared approaches.

*The quiet revolution is being led by those governing the financial system, often in collaboration with market actors.* Innovative measures are being advanced by central banks, financial regulators and standard setters including credit rating agencies and stock exchanges. Measures taken vary widely:

- *Nationally*, from South Africa's leadership in embedding sustainable development into listing requirements, to Brazil's banking regulations governing environmental risk, Bangladesh's central bank refinancing to support green investment, China's leadership in advancing green credit guidelines and the Bank of England's prudential review of climate risk.
- *Internationally*, from principles-based coalitions such as the Sustainable Banking Network for Regulatory and the Sustainable Stock Exchange Initiative, to S&P Rating Services' climate-sensitized sovereign credit ratings, and the Financial Stability Board's consideration of the role of central banks in addressing climate-related risks.

*Integrating sustainable development into the evolution of financial systems provides both short and long-term potential benefits.* In the short to medium term:

- *Developing countries* have the opportunity to increase financial access, reduce environmental pollution with associated improvements in public health, and improve financial flows to clean energy and other new sources of economic development.
- *Developed countries* have opportunities for improving market integrity, aligning the financial sector more closely to the of the real economy, enhancing financial and monetary resilience, and addressing policy goals such as financing the energy transition.

*At stake is the potential to shape a financial system fit for the 21st century.* The longer-term opportunity for both developed and developing economies is to evolve efficient financial systems that are more effective in serving the needs of inclusive, sustainable economies and societies. Measures identified by the Inquiry, taken one by one, are unlikely to protect society from other financial system weaknesses that enable mispricing, rent-taking and instability. However, the cumulative impacts of such measures can be more than the sum of their parts. Implemented with ambition and engagement, they can trigger broader, system-level shifts.

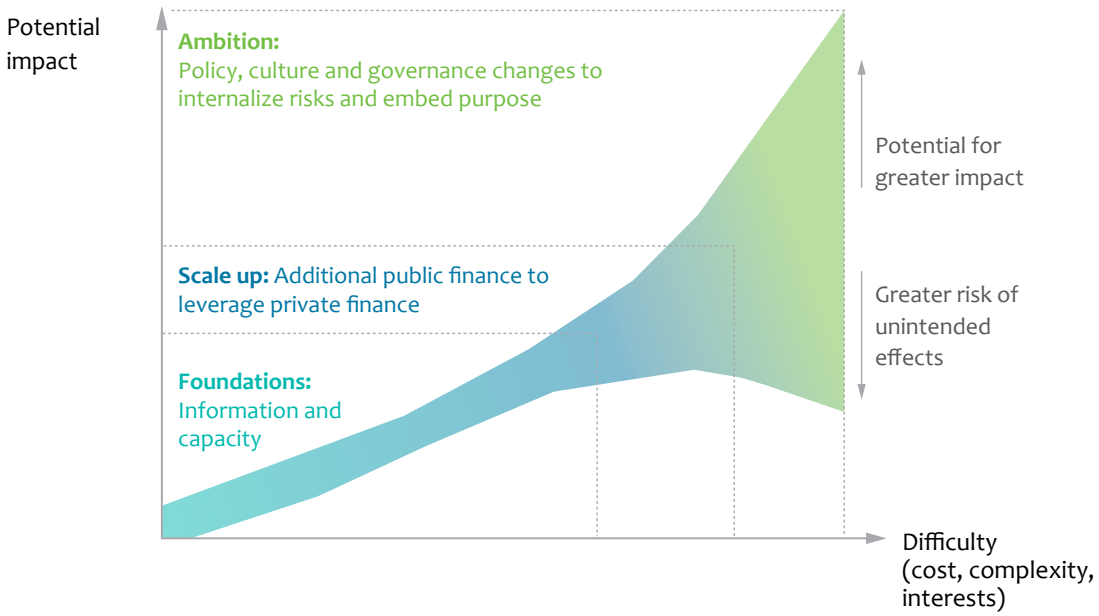
## 3. FRAMEWORK FOR ACTION

*Aligning the financial system with sustainable development requires a systematic approach.* Developing a sustainable financial system will only be achieved by going beyond both business-as-usual approaches to financial market development, and the adoption of ad hoc innovations. The Inquiry's Framework for Action provides a systematic approach to building practical pathways, drawing on a toolbox of measures based on country experience. The framework proposes policy packages for each of the major pools of assets and associated actors: banks, bonds, equities, institutional investors and insurance. Furthermore, it sets out four recommendations for action in aligning financial system governance with sustainable development.

*Designing policy packages and implementation pathways requires a balance to be struck between ambition, practicality and risks.* Comparatively simple measures to improve market practice such as enhanced disclosure may be useful starting points but alone will not deliver the quantum changes required. Measures such as priority lending and strengthened environmental liability, on the other hand, may over time drive greater change, but need careful design and market preparation to avoid unintended consequences. Ultimately, what is needed is a package of measures that trigger broader changes in the behavioural, cultural and market dynamics of the financial system.



FIG IV POTENTIAL IMPACT AND PRACTICALITY OF IMPLEMENTATION



## 4. NEXT STEPS

*The Inquiry's findings provide a powerful basis for taking the next steps in developing a sustainable financial system at the national and international levels.* Critically, the momentum observed and supported by the Inquiry needs to be built on, through both national leadership and international cooperation. The findings suggest two related arenas for action:

- *Nationally:* a starting point is a high-level diagnosis of needs and opportunities within the financial system and the development of a broad-based social compact of public agencies, financial institutions and civil society to develop a shared approach to required action.
- *Internationally,* cooperation, and specifically 10 areas identified by the Inquiry, four focused on specific asset pools and actors, five on developing the governing architecture to deal more explicitly with sustainable development, and finally the establishment of an international research consortium to take forward under-explored topics and themes.

> "Bangladesh Bank and a number of other developing economy central banks have been trying to address the risks of instabilities and imbalances at sources, by promoting socially responsible inclusive and environmentally sustainable institutional ethos in financing."
>
> Dr Atiur Rahman*, Governor, Bangladesh Bank

*Implementing the Inquiry's findings will require the involvement of many actors.* Critical to success is the active involvement of stewards of the financial system, including central banks, regulators and prudential authorities, standard setters, government bodies including ministries of finance and market-based rule-setters including stock exchanges and credit rating agencies. Yet the Inquiry's findings also highlight the critical role of other actors, notably:

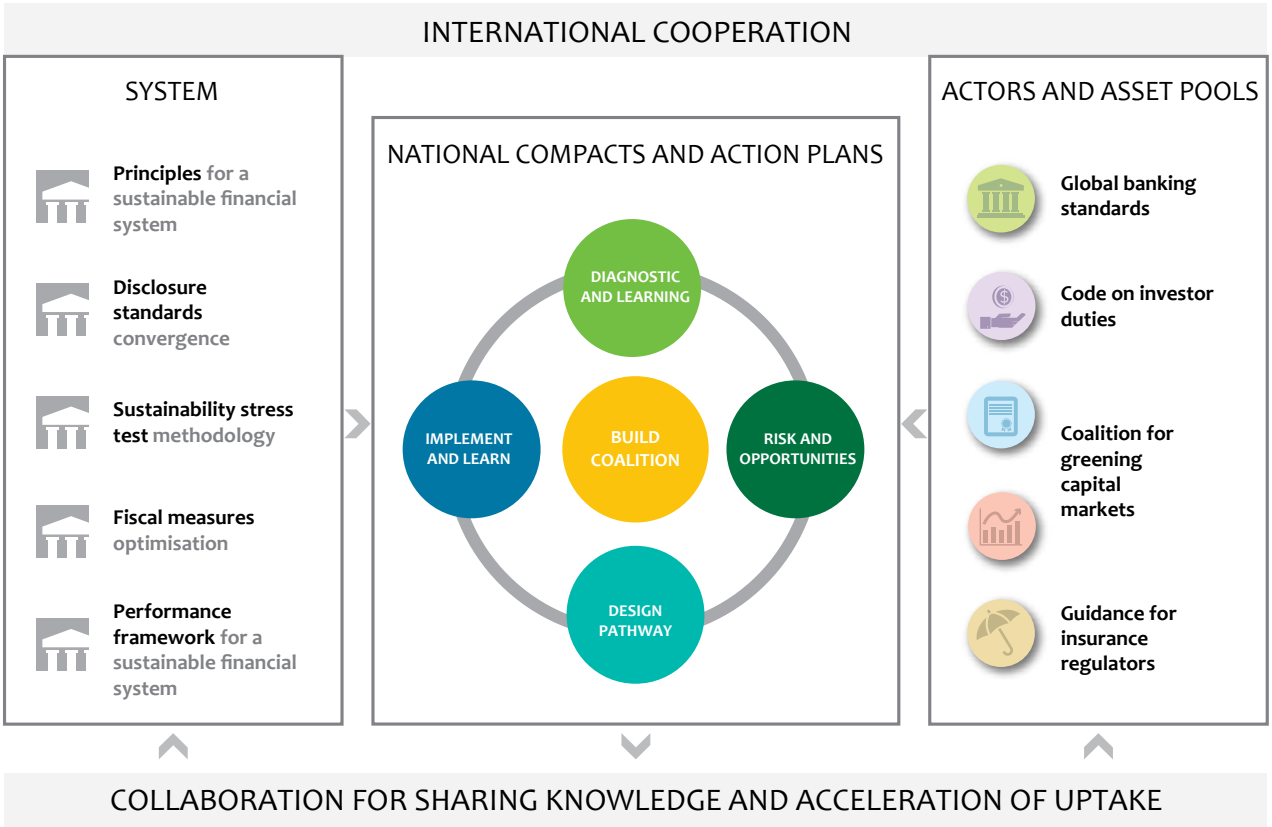
- *Market actors*: from banks to pension funds and analysts – contributing through exemplary leadership, knowledge development and expert guidance, coalition building and advocacy.
- *Sustainable development community:* from environmental ministries to think tanks, civil society and agencies such as UNEP – bringing expert knowledge, coalition and public awareness building.
- *International organizations:* those involved in financial system development – for policy reforms, knowledge development, norm building and standards development, and coordination.
- *Individuals:* as consumers of financial services, as employees of financial institutions and as participants in civil society - bringing unique skills and perspectives on how to connect the financial systems with human needs and aspirations.

> "The central bank time horizon is relatively short - but the real challenges to prosperity and economic resilience from climate change will manifest well beyond this. We face a tragedy of horizons."
>
> Mark Carney, Governor, Bank of England[32]

*The Inquiry has highlighted the importance of coalitions in advancing a sustainable financial system.* Many of the above actors need to engage in such coalitions in their respective roles, nationally, regionally and internationally. The Inquiry's findings point to continuing deficit in knowledge and capabilities: first, regarding the

financial system for citizens groups and the environmental and broader sustainable development community; and second, for financial system experts when it comes to environment sustainability. New coalitions are particularly important to overcome these deficits and thereby *create shared understandings of how to deliver effective strategies for change.*

FIG V NEXT STEPS FOR NATIONAL ACTION AND INTERNATIONAL COOPERATION



## 5. TOWARDS A SUSTAINABLE FINANCIAL SYSTEM

*UNEP's Inquiry has revealed both the need and the potential to align the financial system with, and so deliver financing for, sustainable development.* Today's dispersed, practical experience can form the basis of a systematic approach to advancing such an alignment. Practical pathways can be designed that over time can trigger systemic change. Such approaches can be crafted by coalitions, informed and further amplified through international cooperation. Failure to grasp this opportunity would make it difficult to achieve the Sustainable Development Goals.

*Progressing a sustainable financial system may improve the efficiency, effectiveness and resilience of the system itself.* Individuals measures that have been highlighted, taken one by one, are unlikely to protect society from other financial system weaknesses that enable mispricing, rent-taking and instability. However, change in complex, adaptive systems such as finance can be triggered by the development of new behavioural norms anchored in a renewed sense of purpose. The impacts of such measures can be more than the sum of their parts. Implemented with ambition, care and engagement, such measures can trigger broader, system-level shifts. An initial focus on specific goals, such as financial inclusion, air pollution or climate change, can reveal fresh ways of achieving traditional goals for the system in new contexts.

*Realizing this potential is essentially a matter of public choice.* The shape of today's financial system is a result of many historical choices. There was never a blueprint, certainly, but the system was formed by the evolution of societal needs and expectations, associated policy decisions and the dynamic response to changing conditions by market actors. The Inquiry's findings point to a new generation of such public choices being made by institutions whose task is to shape tomorrow's financial system.

*At stake is the potential to shape a financial system fit for the 21st century purpose of serving the needs of sustainable development.*

> "The sustainable finance program is not only intended to increase financing but also to improve resilience and competitiveness of financial institutions…sustainable finance is a new challenge as well as an opportunity in which financial institutions may gain benefits of growing and developing more stably."
>
> Muliaman D. Hadad, Chairman of Indonesia Financial Services Authority (OJK) Board of Commissioners

> "The People's Bank of China is spearheading the drafting of the 13th Five Year Plan for the reform and development of China's financial sector; green finance will be a key element of this plan."
>
> Pan Gongsheng, Deputy Governor, People's Bank of China[33]

THE FINANCIAL SYSTEM WE NEED

Chapter ● 1

# THE FINANCIAL SYSTEM WE NEED

## 1.1 RESHAPING FINANCE

> "Reforming the financial system remains unfinished business – we have stabilized the system, but have a long way to go in designing a financial system that meets the needs of sustainable development."
>
> John Lipsky*, Senior Fellow, Johns Hopkins University[34]

*Today, the financial system is emerging from its worst crisis in decades, originating in some of the world's most sophisticated financial markets.* Policies, regulations, standards and new institutions have been introduced to stabilize the system.[36] Yet concerns remain that the financial system is still not fit-for-purpose. The stability and effectiveness of key parts of the financial system, for example, remain at risk from short-termism and excessive leverage. There is broad agreement that further improvements are needed in governance, transparency and the alignment of incentives.[37] Individuals and businesses in many parts of the world lack access to finance, and in many countries, financial systems remain weak in channelling savings to meet long-term investment needs.[38]

Much has been achieved, but reform remains an "unfinished business".

> "China was the last country to industrialize through fossil fuels. From India onwards, all developing countries will have to do this without recourse to growing fossil fuel consumption. No western country has done this. It is a first. Innovations are needed in every kind of financial market."
>
> Rathin Roy, Director, National Institute of Public Finance and Policy, India[35]

*Beyond these more conventionally understood challenges is the fundamental need to ensure that the financial system serves the transition to sustainable development.* Providing a decent future for all requires wealth creation that supports inclusive development while protecting and restoring natural assets. Recent decades have seen astonishing progress, from poverty reduction to clean energy deployment. Public awareness and political engagement in pursuing sustainable development goals has never been greater. The context of this progress is, however, one of an accelerating environmental deterioration, causing considerable human harm, threatening development models, and damaging vital life support systems.[39]

*Economies have a driving influence on environmental outcomes, which in turn, are shaped by policy choices.* The world's US$80 trillion annual economy creates environmental externalities valued at over US$7 trillion annually, and at current patterns of economic growth are set to further erode global natural wealth by over 10% by 2030.[40] Similarly, financial and monetary policies and regulations influence financial decision-making, affecting the critical nexus between sustainable development and the global financial system.

*Over the past 30 years, finance pioneers have begun to integrate social and environmental factors into specific financing instruments, assets and institutions. The value of capital committed to*

*more responsible financial practices continues to grow,*[41] just as evidence shows that sustainability factors can contribute *positively to financial performance.*[42]

*Early stage innovations in advancing sustainable finance have not, however, become common practice.* Finance remains disconnected from sustainable development for three core reasons:

- Policies and prices in the real economy do not ensure that environmental and social costs are fully accounted for.
- Fiscal resources are insufficient to close the viability gap.
- Rules governing the financial system do not ensure that financial decision-making takes account of social and environmental sources of risk and opportunity.

Actions to address the first two barriers – such as full-cost pricing and the effective use of public finance – are recognized pathways and well understood.[43] Today, it is accepted that public policies have a role to play in aligning the real economy to sustainable development outcomes. However, weaknesses in the financial system itself may also have implications for both the environmental impacts of financial decision-making, and shape the feedback effects of unsustainable development on the stability and effectiveness of the financial system. In this context, the potential for financial and monetary policies, regulations and standards to catalyse financing for sustainable development has, to date, not been systematically explored. The United Nations Environment Programme (UNEP) *Inquiry into the Design of a Sustainable Financial System* has been established to explore this potential.

## THIS REPORT

*This report contains the findings, conclusions and recommendations of the Inquiry, organized into five sections:*

- The rest of this section outlines the ***Inquiry's scope and its approach.***
- Section two sets out the context and a ***Framework for Analysis that has guided the Inquiry's work.***
- Section three presents the ***Inquiry's core findings.***
- Section four sets out a ***Framework for Action that enables observed experience to be translated into systematic plans for action.***
- Section five closes with recommendations for ***Next Steps at the national and international levels.***

### Box 1 The Urgency of Change: Natural Systems Under Pressure

Globally, natural systems are severely degraded, causing considerable human harm, threatening the viability of development models and often resulting in irreversible damage to the provision of critical ecosystem services. Four out of nine "planetary boundaries" have been crossed: climate change, loss of biosphere integrity, land-system change, and altered biogeochemical cycles.[44] The scale of the challenge is indicated by research suggesting that natural capital has declined in 116 out of 140 countries.[45] Critical stresses include:

- Air pollution: Around one in eight people die from air pollution exposure – or 7 million people per year.[46]
- Climate Change: Greenhouse gas emissions add energy to the Earth's system at a rate equivalent to the detonation of four nuclear bombs every second.[47]
- Natural Disasters: Almost 22 million people were displaced in at least 119 countries by natural disasters in 2013.[48]
- Species Loss: The rate of species loss is now up to 100 times higher than the background rate.[49]
- Water: 21 of the world's 37 largest aquifers have passed their sustainability tipping point.[50]

## 1.2 THE INQUIRY

### MANDATE AND SCOPE

The UNEP *Inquiry into the Design of a Sustainable Financial System* was established to advance policy options to improve the financial system's effectiveness in mobilizing capital for sustainable development.[51] The Inquiry builds on UNEP's long history of engagement with the financial community, notably through two decades of experience with the UNEP Finance Initiative (UNEP FI),[52] as well as through its green economy activities.[53]

*While the Inquiry's mandate concerns sustainable development, its principal focus has been on the environmental dimension of sustainable development, examining the ways in which financial policy and regulations can contribute to reduced pollution, improved natural resource stewardship and action on climate change. It has also looked at how social priorities, such as increasing access to finance, intersect with an inclusive green economy.*

The Inquiry has focused on financial and monetary policies and financial regulations, as well as standards, including disclosure requirements, credit ratings, stock exchange listing requirements and indices. In doing so, the Inquiry has paid attention to the role that the financial system's rule-makers can play, notably:

- Central banks, financial regulators, finance ministries and other government departments.
- Standards institutions, including market-based standard-setters such as stock exchanges and credit rating agencies.
- International organizations and platforms with financial market development and oversight remits.

*The Inquiry recognizes that encouraging and empowering financial system rule-makers will require the involvement of many other actors.* Environment ministries, for example, provide technical guidance and set complementary market-shaping rules. Financial institutions have a key role to play in shaping a practical policy agenda and supporting its effective implementation. The importance of the awareness of the wider public and their actions as citizens, entrepreneurs and employees, consumers, and investors is fundamental. How best to build partnerships to forge effective action has therefore been explored throughout the Inquiry's work.

*For reasons of time and resource limitations, the Inquiry has focused on major financial flows involving five key asset pools and actors: banking, bond and equities markets, institutional investors, and insurance.* It has not considered other dimensions of financing for sustainable development such as illicit finance, public and

**THE INQUIRY'S CORE QUESTIONS**

**why** under what circumstances should measures be taken to ensure that the financial system takes fuller account of sustainable development?

**what** measures have been and might be more widely deployed to better align the financial system with sustainable development?

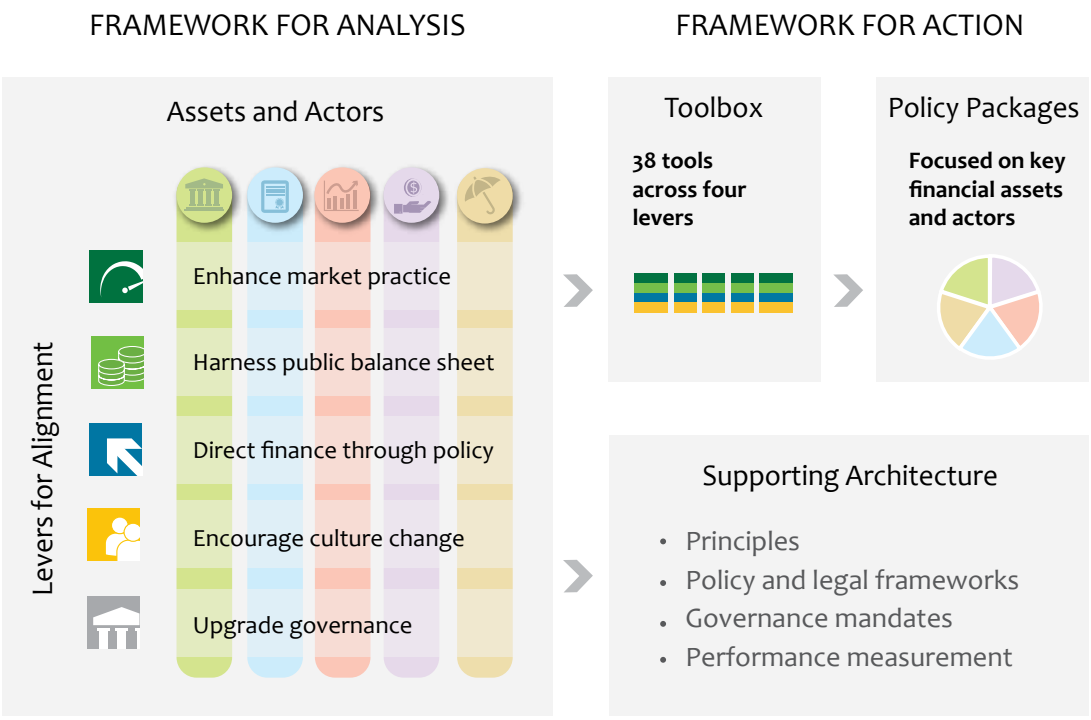
**how** can such measures best be deployed?

development finance, direct investment and informal financial systems. These and other out-of-scope areas are certainly important, and could be assessed in future work.

*The Inquiry has been supported by an Advisory Council,* with individual members contributing through country and thematic leadership. In addition, the Inquiry has worked with a number of senior advisors and over forty national and international partners in undertaking its engagement, dialogues and research, (listed in Appendix III) including: central banks and financial regulators, government bodies, financial market actors and related associations, research institutions and civil society.

*Finally,* the Inquiry's investigations identified innovative activities at the country level, which led to on the ground engagements in design and development activities, some of which are listed below.

FIG 1 THE INQUIRY'S FRAMEWORKS



## Box 2 The Inquiry Partnerships for Change

**BANGLADESH** Bank (the Central Bank of Bangladesh), represented by its Governor on the Inquiry's Advisory Council, worked with the Inquiry to commission an assessment of its work linking monetary policy and sustainability.[54]

**BRAZIL'S** banking association, the Federação Brasileira das Associações de Bancos (FEBRABAN), represented by its President on the Inquiry's Advisory Council, has drawn on the Inquiry's international network and knowledge in advancing Brazil's domestic dialogue on sustainable finance.[55]

**CHINA'S** central bank, the People's Bank of China (PBC), has co-convened with the Inquiry, a Green Finance Task Force involving dozens of officials and market actors to draw up proposals for a green financial system.[56,57]

**FRANCE**, building on its Presidency of the 2015 UN Climate Change Conference in Paris (COP21), has likewise drawn on the Inquiry's international knowledge network in advancing its own Commission on Innovative Climate Finance mandated under President Hollande.[58]

**INDIA'S** Federation of Indian Chambers of Commerce and Industry (FICCI) has catalysed a high-level dialogue between the industry, government and regulators as to how to best align India's developing financial system with the country's massive investment needs.[59]

**INDONESIA'S** financial services regulator, the Otoritas Jasa Keuangan (OJK) has involved the Inquiry in the promotion and further development of its Roadmap for Sustainable Finance through dialogue and its newly established multi-stakeholder task force.[60]

The **SWISS** Federal Office for the Environment, represented by the State Secretary on the Inquiry's Advisory Council, launched a national consultation with the Swiss Sustainable Finance Initiative, responding from a Swiss perspective to the Inquiry's early findings.[61]

The **UK'S** Bank of England has established its leadership in initiating a prudential review of climate risk in the insurance sector, which has contributed to the consideration of climate risk by the Financial Stability Board.[62]

The Inquiry has partnered with and participated in a number of international initiatives, including with the Global Green Growth Institute, International Institute for Sustainable Development, the International Union for Conservation of Nature, the Organisation for Economic Cooperation and Development, the Principles for Responsible Investment, the United Nations Conference on Trade and Development, the UNEP Finance Initiative, the World Bank Group, the World Economic Forum, the World Resources Institute, and the World Wide Fund for Nature. Finally, the Inquiry has partnered with the People's Bank of China and the Bank of England in mapping potential areas for international cooperation on green and sustainable finance, in part to inform existing international platforms and processes, such as the G20.

# FRAMEWORK FOR ANALYSIS

Chapter ● 2

# FRAMEWORK FOR ANALYSIS

## 2.1 CONTEXT FOR ANALYSIS

### FINANCING THE TRANSITION

*Financing sustainable development will require capital flows to be redirected towards critical priorities and away from polluting and unsustainable, natural resource intensive activities.* However, there is currently no commonly agreed basis for assessing financing needs for sustainable development. Many efforts have been made to estimate specific financing needs, most recently in the context of the UN Financing for Development conference. A range of estimates exist for different aspects of the financing challenge, notably access to energy, biodiversity, climate change, food security, water and sanitation.[63] In the most comprehensive assessment to date, the United Nations Conference on Trade and Development (UNCTAD) World Investment Report 2014 has estimated that:

- US$5-7 trillion a year is needed to finance the Sustainable Development Goals.
- Developing countries will require some US$ 3.9 trillion per year; currently only US$1.4 trillion is being delivered, leaving a gap of US$ 2.5 trillion to be filled from private and public sources.[64]

Underlying these aggregates, however, is a confusing picture based on overlapping and incomparable approaches and definitions and compounded by patchy data.

*A critical issue is the balance between public and private financing.* Public finance will only provide a small fraction of total financing needs.[65] In China, for example, estimates by the People's Bank of China and the Development Research Centre of the State Council suggest total green finance needs up to about US$400 billion annually, of which no more than 15% will be met from public sources.[66]

- The International Energy Agency (IEA) estimates that over the period to 2035, the investment required each year to supply the world's energy and energy efficiency needs will rise towards US$2.5 trillion a year, up from US$1.7 trillion in 2013. In many countries energy and power generation remain in public ownership. However investments whether by private or state owned companies are largely funded by a combination of retained earnings, equity and debt.[67]

- In agriculture, the bulk of an estimated annual investment gap of US$260 billion in developing countries will be commercially fundable, but public funds are needed to tackle rural poverty and hunger.[68]

*Financing for sustainable development cannot be understood as an exclusively incremental cost challenge, but requires an appreciation of broader changes needed across the financial system.* Certainly, additional costs may be incurred in some areas of financing. Despite the many instances where there may be no additional or negative incremental costs, profitable opportunities can be marginalized through short-term investor horizons and the broader mispricing of financial risks.

- The greatest needs are for infrastructure, predominantly in developing countries – the incremental costs are large but not insurmountable.[69]
- Many areas, from the financing of small and medium-sized enterprises to education and agriculture, offer the potential of either private financial returns or broader economic and social returns – sometimes both.[70]

## Box 3 Diverse Estimates of Financing Needs for Sustainable Development

Key estimates in relation to sustainable development goals[71] where significant capital costs are estimated:

**Food security (Goal 2: Zero hunger) –** The Food and Agriculture Organization (FAO) estimates that eliminating hunger by 2025 would require an additional US$43.9billion per year of investment for rural infrastructure and market access (US$18.5 billion); developing and conserving natural resources (US$9.4 billion); public R&D and extension (US$6.3 billion); rural institutions (US$5.6 billion), and US$4.1 billion for rural electrification.[72]

**Water and sanitation (Goal 6: Clean Water and Sanitation) –** Estimates by the World Health Organization and others are that US$27 billion will be required annually to ensure universal access to safe drinking water and adequate sanitation – however, this only includes the most basic access (e.g. to a public standpipe).[73]

**Energy for all (Goal 7: Affordable and Clean Energy) –** The International Energy Agency (IEA) estimates that meeting the target of universal access to electricity and modern cooking solutions may require some US$49 billion per year through to 2030, US$44 billion for universal access to electricity and US$4.4 billion for modern cooking solutions.[74]

**Small and medium enterprises (Goal 8: Decent work and economic growth) –** McKinsey and the International Finance Corporation have estimated the unmet need for credit for small and medium enterprises as up to US$2.5 trillion in developing countries and about US$3.5 trillion globally.[75]

**Green infrastructure (Goal 9: Industry, Innovation and Infrastructure) –** The Group of Thirty (G30) suggests that on current trends, there could be an annual investment gap as great as US$10 trillion for long-term investment by 2020.[76] The Global Commission for a New Climate Economy concludes that an additional overall 4% will be needed to green infrastructure.[77]

**Climate change (Goal 13: Climate Change) –** Estimates reviewed by the Intergovernmental Panel on Climate Change (IPCC) are that global investment in low-carbon energy may needs to increase to US$1.1 trillion per year between 2010 and 2019, while US$150 billion will be needed each year after 2025 to adaptto climate impacts in developing countries alone.[78]

**Ecosystems and biodiversity (Goal 14: Life below water and Goal 15: Life on land) –** Estimates by the High-Level Panel on Global Assessment of Resources for Implementing the Strategic Plan for Biodiversity 2011-2020 are that US$150-430 billion is needed per year for biodiversity conservation.[79]

- Many areas are characterized by high up front costs and longer-term returns, which for some of the investments reflect the substituting of natural capital with technology.[80]
- Additional investments in sustainable assets can yield savings both in fixed capital and resource use, thereby, actually increasing the capacity of the financial system.[81]

*Sustainable development requires not only more investment in some areas, but also less in others.* There is neither a systematic methodology nor adequate data to determine comprehensively which activities hinder the prospects for sustainable development. Most work has taken place in the field of climate change, where the IPCC, the IEA and the Commission on the Economy and Climate all calculate that a low-carbon transition will involve significant reductions in investment in fossil fuel extraction and power generation compared to business-as-usual increases.[82] The Commission on the Economy and Climate estimates some US$5.7 trillion of investment reduction in these areas between 2015 and 2030. While investment must be redirected away from the most polluting and environmentally unsustainable activities, resource intensive and high environmental impact sectors need to be managed in a way that enhances their efficiency and mitigates negative impacts.

The present value of investment assets at risk from 6°C of warming has been estimated, using private discount rates, at some US$13.8 trillion.[83] Alongside this, the transition to a low-carbon economy could also impact the valuations of pollution-intensive assets, with up to 80% of fossil fuel reserves potentially "unburnable".

## STATE OF TODAY'S FINANCIAL SYSTEM

*Financing sustainable development, therefore, requires a systemic approach that more effectively aligns the design and functioning of financial and capital markets to the needs of the transition to an inclusive, green economy.* Key to building a sustainable financial system is to overcome barriers preventing the full appreciation of social and environmental factors in financial decision-making.

- *Understanding how the financial system allocates capital, manages risk and impacts the wider economy has been significantly upgraded in the wake of the financial crisis.* Much has been written, many options have been put forward, and some steps have been taken to improve aspects of its stability, efficiency and effectiveness.[84] Some conventional wisdoms have been overturned, exemplified by the large-scale quantitative easing undertaken by leading central banks.[85] Others have been reinforced, exemplified by increased stringency in capital provisioning requirements advanced though the new Basel III banking rules.

### Box 4 Avoiding Stranded Assets

Environmental risk factors are increasingly becoming a force for asset stranding – assets that have suffered from unanticipated or premature write-downs, devaluations, or conversion to liabilities.[86] These risks are flowing both from the degradation of natural capital, as well as from shifts towards more sustainable models of development. The most prominent example is the risk that the majority of fossil fuel reserves cannot be commercialized if global climate goals are to be met.[87] Citigroup has estimated that in a low-carbon scenario the value of "unburnable" fossil fuel reserves could amount to over US$100 trillion out to 2050.[88]

Carbon is not the only driver of stranded assets. One recent evaluation concluded that an extreme decline of natural capital could result in a value at risk for the capital invested in global agriculture of over US$11 trillion.[89] New tools are being developed to enable financial institutions to better understand the risks of stranded assets from the degradation of natural capital.[90]

- Research by the International Monetary Fund (IMF) suggests a bell-shaped relationship between financial development and growth in the real economy. At higher levels of financial development, there is a loss in the efficiency of investment in terms of supporting total factor productivity. Very high levels of finance can have negative impacts due to increased frequency of 'booms and busts' and a diversion of talent to the financial sector.[91]
- The Organisation for Economic Cooperation and Development (OECD) has extended this analysis, arguing that financial expansion can fuel greater income inequality. To ensure a financial sector that supports long-lasting inclusive growth, the OECD has recommended steps to prevent credit overexpansion, such as removing the tax bias against equity financing.[92]
- New insights have been gained into the efficiency of the financial system in intermediating capital. According to one estimate, economies of scale and technological advances in finance have not led to lower costs and greater social value, unlike advances in other economic sectors.[93]
- A key lesson for financial stability has been that the governance, incentives and risk management of financial institutions can have implications for the stability of the system and the wider economy. This issue is being considered by a number of central banks and, on request from the G20, the Financial Stability Board with respect to climate risk.[94]

*Underlying these developments are growing concerns about the implications of short-termism*, particularly in equity markets, both on returns to savers and the deployment of capital for strategic economic development.[95] Sustainable development requires a long-term view in order to deliver fairness between generations. Short-termism exacerbates the tendency to discount the importance of future generations in today's decision-making: an increasing challenge given the irreversible nature of many environmental challenges. Sustainable development is not the same as having a long-term time horizon, as there are many immediate social and environmental externalities that need to be addressed. Short-termism does, however, aggravate the externalities problem, especially where much of the investment needed for sustainable development is characterized by relatively high up front costs and returns spread over a longer period.[96]

Concerns over short-termism, supported by a growing body of research and by leading financial practitioners, highlights the damaging effects of the pressure on corporations to deliver short-term returns ('quarterly capitalism').[97] One expression of this misalignment of interests is the current high level of share buy-backs, described by one commentator as "looting the future".[98] Closely related to this are concerns that there is a bias towards debt financing and away from equity, reinforced in many jurisdictions through the treatment of interest as a deduction for tax purposes. Equity capital cushions enterprises from interest rate and other shocks and, it is argued, ought to be a better vehicle for the long-term investment and risk sharing.[99]

## A MOMENT IN TIME

*There is an historic window of opportunity, as well as a need, to develop a sustainable financial system.* It is hard to redirect the design and operation of systems that appear highly successful, attract resources and support, and are able to fend off pressures for change. The same is true for systems that are in a vicious cycle of dysfunction and collapse.[100] Today's financial system does not fulfil these criteria – quite the reverse. Four specific factors make the current moment in time an unusual, if not historic, opportunity where change is possible to better align the financial system with the needs of sustainable development:

1. *Post-financial crisis:* policy and regulatory responses to the crisis demonstrated the will and capacity of governing institutions to act in unconventional ways, at scale and in a concerted fashion, when faced with serious, systemic challenges.[101] Yet

"unfinished business" remains, including: continued fragility; inefficient, unproductive and ultra-abundant liquidity; reduced access to global capital for developing economies; and the need for financial regulations and vehicles which enable long-term lending and investment.[102]

2. *Emerging leadership:* the growing importance and influence of emerging economies in international financial affairs places the nexus between financial market development and national development priorities more centrally in the policy debate. This occurs both nationally and internationally, and opens the door to a greater diversity of approaches than has become the norm across much of the developed world.

3. *Technology disruption:* new business models that employ innovative information technologies are challenging incumbent practices across the world of financial intermediaries. This drives diversity and competition into concentrated, relatively homogenous markets, which in turn empowers citizens, builds new financing channels and creates new opportunities (and challenges) for governing institutions.[103]

4. *Public awareness:* a widespread acknowledgement of the need to transition to a less natural-resource intensive, low-polluting and climate-resilient economy, placing environmental and social issues increasingly at the heart of economic policymaking.

Strategically, the post-crisis situation suggests clear pathways for both developing and developed country financial systems. For developing countries, further financial deepening – such as expanding local currency bond markets, and strengthening local financial markets and banks through guarantee facilities – is a key priority. For developed countries, continued reforms to reconnect financial decision-making with long-term value creation in the real economy are required. For both, the new challenge is to do this in ways that align their systems with sustainable development.

Most of all, the financial system can be an enabler of, or barrier to, the transition to sustainable development, rather than an isolated part of a wider system. It must be channelled to secure all-important public benefits, as it has done throughout history, through the mobilization and guidance of its extraordinary dynamism and massive innovative capabilities. Against this strategic backdrop, the Inquiry has investigated the emerging innovations in the rules that govern the financial systems of the world – uncovering a "quiet revolution".

> "Finance is like our blood, it serves a critical purpose until separated from the human body."
>
> Henri de Castries, CEO, AXA[104]

> "We have low interest rates but it is not feeding through into real investment. Instead corporates are piling up debt to buy-back shares – one trillion dollars worth in 2015. They are doing that because they don't find attractive reasons to invest."
>
> Jean-Pierre Landau*, Professor of Economics, Dean of the School of Public Affairs, Sciences Po[105]

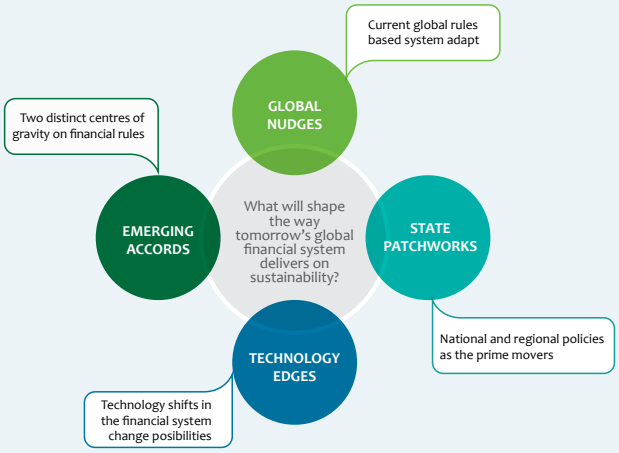
## Box 5 Scenarios of a Financial System in Flux

Tomorrow's financial system must be aligned to the needs of sustainable development.

The Inquiry, with support from the OECD, has developed scenarios that lay out possible futures within which a sustainable financial system needs to evolve.[106]

- Global nudges – governments and international bodies working together broadly within the current rules-based system.
- Emerging accords – financial system developments cluster around several centres of gravity reflecting both the current consensus and emerging economies.
- State patchworks – sustainability is advanced through sub-national, national and regional efforts rather than top-down solutions.
- Technology edges – new technologies and business models disrupt the existing system and shape a new financial architecture.

Fig 2 Scenario Frame




## 2.2 FRAMEWORK FOR ANALYSIS

*The Inquiry's Framework for Analysis is made up of four elements – concepts and definitions, reasons for action in the financial system, categories of measures and their intended impacts, and approaches to the evidence base.*

### DEFINING THE BASICS

*Understanding the Inquiry's focus requires some clarification of terms.* Notably, the financial system is understood to:

- *Perform many critical functions:* enabling payments and exchange, intermediating between providers and users of capital, and providing protection against risk, notably through insurance.
- *Involve many actors:* this includes users of financial services as well as professional intermediaries, including banks, securities markets, pension and mutual funds, and insurers. It also includes the market and governing infrastructure, such as stock exchanges, credit rating agencies and standards bodies, central banks, regulatory and supervisory authorities.[107]
- *Be guided by rules, including principles and norms:* these are expressed through formal regulations, as well as policy guidance, market standards and customary norms.

*Financial assets are intangible assets* whose value is derived from a contractual claim that is ultimately, although often not directly, dependent on the productivity of "real wealth" (social, environmental or natural, and produced or physical wealth). Stocks of financial assets in the twenty large economies plus the Euro Zone tracked by the FSB amount to around US$305 trillion.[108] Annual savings and investment, both through the financial system and directly within households, governments and businesses amounting to US$16 trillion in 2013, or around 22% of GDP.[109]

Much real wealth is not monetized and not counted in estimates of financial assets.[110] For example, the value of forest wealth according to one estimate is US$273 trillion – close to the total estimate of global financial assets.[111]

## WHY INTERVENE IN THE FINANCIAL SYSTEM?

*Conventional wisdom suggests that if the problem concerns real economy externalities, the solution is to intervene in the real economy.* In many instances, this is exactly right.[112] The IMF, for example, points to the urgent need to reduce energy subsidies estimated at US$5.3 trillion annually, or about 6.5% of global GDP, which are damaging to public health, the environment and fiscal performance.[113]

*Mobilizing capital for sustainable development may also require action in the financial economy. Historically, the sustainability dimension has been at the margins of the financial reform agenda, and vice versa.* There are, however, four interconnecting reasons which may give justification for taking account of sustainable development in financial system design and development:

1. ***Managing risk:*** Action may be justified where inadequate risk management in the financial system exacerbates environmental and social externalities. For example, this reason underlay the new regulation Peru introduced in April 2015, which requires banks to incorporate environmental and social factors into due diligence.

2. ***Promoting innovation:*** Action may be justified to stimulate "missing markets", generating positive spillovers, for example, through common standards that improve liquidity in embryonic areas. This is illustrated by recent stimulation of the green bond market by setting "green" standards to improve market integrity and associated investor confidence.

3. ***Strengthening resilience:*** Costs of natural hazards are US$250 billion to US$300 billion annually, and could increase in a non-linear fashion.[114] Action may be justified where the stability of parts of the financial system may be affected by environmental impacts, or by associated policy, technological and social responses.[115] The Bank of England is assessing implications of climate change on the safety and soundness of the UK insurance sector.[116]

4. ***Ensuring policy coherence:*** Action may be justified to ensure that the rules governing the financial system are consistent with wider government policies, exemplified by China's explicit focus on the alignment of financial market development with its focus on the green economy, including its anti-pollution drive.

*These four reasons all need to be considered alongside the potential negative impacts and unintended consequences of action on the financial system or real economy outcomes.* Such negative outcomes

### DEFINING A SUSTAINABLE FINANCIAL SYSTEM

Sustainable development requires changes in the deployment and relative value of financial assets and their relationship to the creation, stewardship and productivity of real wealth.

A sustainable financial system is, therefore, one that creates, values, and transacts financial assets, in ways that shape real wealth to serve the long-term needs of an inclusive, environmentally sustainable economy.

"Risk shifting (debt) is unjust and unsustainable."

Tan Sri Andrew Sheng*, Distinguished Fellow of Fung Global Institute[117]

"Financial regulators need to lead. Sooner rather than later, they must address the systemic risk associated with carbon-intensive activities in their economies."

Jim Yong Kim, President, World Bank[118]

can arise for a number of reasons, each leading to the implementation of a flawed measure, either because of system complexities, conflicting objectives, or political interference. The converse can also be the case, that technical or political barriers to effective real economy interventions can make financial economy solutions preferable.

## HOW TO INTERVENE IN THE FINANCIAL SYSTEM

*The Inquiry has established five approaches to frame its analysis of practice.* Each approach is associated with a bundle of possible measures that can be deployed individually or as policy packages. Crucially, each approach is associated with particular levers for delivering public goods and impacting private, risk-adjusted financial returns, as set out below. Such levers will likely be used in conjunction with policy and regulatory measures, public financing and business and technology innovation in the real economy.

*Impacts must often be assessed with incomplete information,* particularly when interventions are innovative and at an early stage of implementation. Broadly, the Inquiry has framed its analysis by reference to three stages in the innovation cycle:

- In the ***early stages*** the challenge is to promote the underlying idea, then demonstrate the practicality (not yet effectiveness) through experimentation, followed by a more systematized description of the innovation alongside its adaptation and (still exceptional) replication.
- Over time***, practice develops,*** and whilst the underlying idea might be retained, the specifics may change dramatically from the early to later stages in the cycle. Costs also change over the cycle, typically falling per unit of output over time, also changing the economics of what is being proposed.
- At some point, ***practice matures*** and more systematic data is collected and analysed, and a greater clarity emerges regarding performance and its underlying drivers, which in turn forms the basis for codification and broader take-up. Innovations can also decline in effectiveness over time, or receive a renewed uplift from changing political and economic conditions.[119]

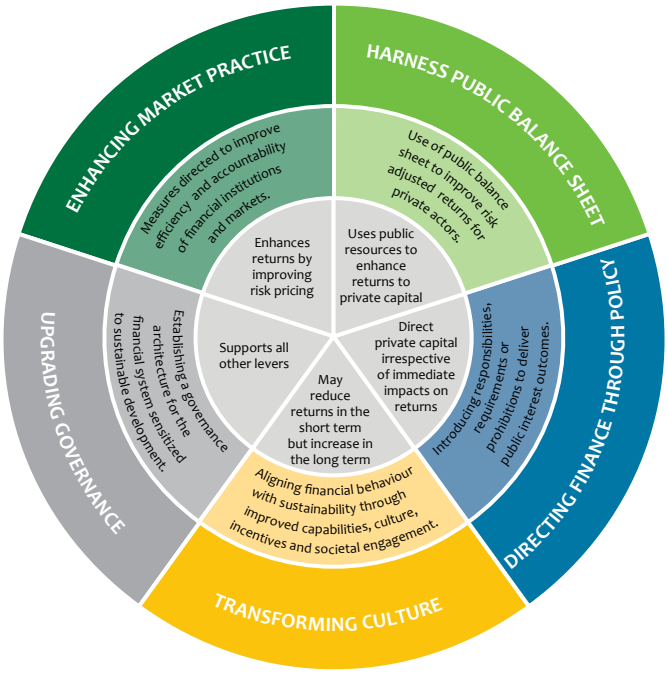
Many of the country-based experiences highlighted by the Inquiry are at an early stage of development, or for other reasons, there is insufficient information to underpin definitive assessments of their effectiveness. In part, this implies the need for further analysis in the light of growing experience, so that lessons from practice feedback into theory and standards for measurement of performance. In the meantime, the Inquiry's approach has been to take account, where impact data is lacking, of similar approaches and the expected or designed effect of measures and stakeholder views.

### Box 6 The Innovation Cycle in Practice: The Rise of Integrated Reporting

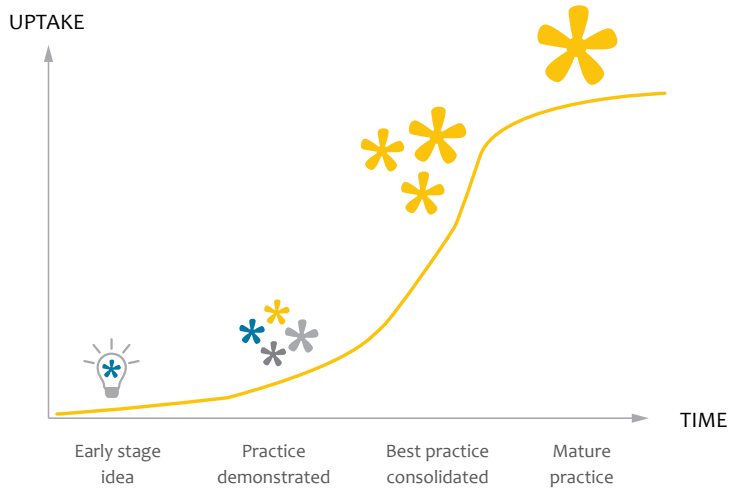
Transparency is a necessary input to financial decisions that take social and environmental factors more fully into account. The origins of reporting on the social and environmental dimensions of corporate performance stretch back into the 1980s – with the first international recognition of the need to encourage improved transparency coming at the 1992 Earth Summit. Environmental concerns, along with anti-corruption, human rights and corporate accountability combined in the development of the Global Reporting Initiative Standard, and later standards on integrated reporting. The rise of sustainability disclosure is a useful illustration of the ways in which the innovation cycle evolves.[120] However, while adoption of sustainability reporting has become common the potential for significant impact remains unfulfilled.

A key lesson has been how to overcome the limitations of a purely voluntary approach, leading to greater interaction with financial system rules, including stock exchange listing requirements, securities regulation and company law. Two main challenges lie ahead: first, to develop greater coherence amongst reporting codes, a need reflected in the Corporate Reporting Dialogue launched in 2014.[121] Second, is to extend transparency on sustainability performance more systematically to the financial sector itself.[122]

## Fig 3 Five Approaches to Aligning the Financial System to Sustainable Development




## Fig 4 Evidence and Innovation Pathways



# A QUIET REVOLUTION

Chapter ● 3

# A QUIET REVOLUTION

## 3.1 PRESSURES, PROSPECTS AND PERSPECTIVES

*The Inquiry's core finding is that a "quiet revolution" is underway, seeking to increase the internalization of sustainable development factors into financial decision-making.* The Inquiry found over 100 examples of policy measures across 40 countries encompassing new policies, institutions, regulations and collaborative initiatives targeting each of the main asset pools and actors, as well as the underlying governance of the financial system.

*Across the diversity of the world's financial systems, this quiet revolution is particularly apparent in developing and emerging economies.* They are faced with more immediate social and environmental challenges, and are less constrained by prevailing norms and interests. Notably, institutions responsible for governing developing country financial and capital markets are more accustomed than their developed country peers to responding to policy signals and national development priorities. Some developing countries are explicitly building sustainable development factors into the design of financial and monetary policies, regulations and standards.[123] A number of champions are also emerging in the developed world, seeking to complement market initiatives with policy frameworks on risk, disclosure and capital markets.[124] The lenses through which developed countries view their financial systems' sustainable development outcomes are broadly comparable,[125] but with some exceptions, they are less inclined to deploy explicit policy measures.

*The emerging revolution, however, is incomplete.* Developed countries' financial systems are adaptive and highly innovative in some respects, but continue to trend towards greater levels of "financialization", where financial returns increasingly arise from transactions that are disconnected from long-term value creation in the real economy.[126] Despite, and in some respects because of, major regulatory developments in the wake of the financial crisis, financial and capital markets are today delivering even less investment in long-term infrastructure. Instead, they continue to reward highly liquid, leveraged trading over the prospects of greater, but less liquid, longer-term returns.[127] While progress toward sustainability is evident, biases toward short-term returns can be an impediment.[128]

*Integrating sustainable financing innovations into the evolution of their financial systems, therefore, provides developed and developing countries with both short- and long-term potential benefits.* In the short to medium term, developing economies have the opportunity to draw on international practice in increasing financial access, reducing environmental pollution with associated public health gains, and improving financial flows to clean energy. Developed countries, likewise, have short- to medium-term opportunities for improving market integrity, dampening less productive forms of trading, enhancing financial and monetary stability, and addressing higher profile goals, such as reduced carbon emissions.

The longer-term opportunity for both developed and developing economies is to evolve efficient financial systems that are more effective in serving the needs of inclusive, sustainable economies and societies. The shared opportunity is to shape a financial system more suited to the 21st century, during which all economies must go through profound transitions towards sustainable development.

## 3.2 CATALYSTS FOR CHANGE

*Efforts to build a sustainable financial system have diverse origins, intentions and approaches – but powerful linkages exist across sectors and countries.* Many developing country initiatives have flowed from a strategic view on the required linkages between the financial system and wider national development priorities. Central bank and regulatory mandates are often placed in the context of wider objectives of reducing poverty and responding to the public health challenges arising from environmental problems.[129] Developed countries, on the other hand, have mainly approached sustainable development as a lens through which to improve the efficiency of financial and capital markets, and occasionally as a potential influence on financial stability.

The most focused efforts which the Inquiry has found evidence of have tended to be in relation to low carbon and energy related actions. These are crucial issues, but do not reflect the full range of environmental challenges such as the sustainability of fish stocks, over extraction of water, and extinction of species, that must be addressed in order to achieve sustainable industries, cities and food supplies.

### Box 7 Key Features of the Quiet Revolution

- **Diverse catalysts:** the growth in green finance initiatives in developing and emerging economies is particularly striking, with advanced economies mostly focusing on integrity and climate change issues.
- **Novelty:** many of these initiatives are relatively new and most are yet to be fully implemented.
- **Action at multiple levels:** most of these innovations aretaking place at the national level, with initial efforts to make linkages with international regulatory frameworks.
- **Multiple mechanisms:** current practice highlights not just a spread of different initiatives, but a range of mechanisms used to deliver the same goal.
- **Market, policy and societal forces:** these innovations involve a dynamic between market innovation, societal expectation, and policy and regulatory intervention.
- **Converging agendas:** two hitherto separate reform agendas are converging – measures specifically targeted at sustainable finance and those addressing wider system health issues (e.g. short-termism).
- **Prudence and purpose:** innovations reveal the nexus between a conventional prudential view and a broader view of the purpose of the financial system.

*The Inquiry's main focus on environmental impacts allows it to learn from experiences in advancing other aspects of sustainable development.* The approach of the Central Bank of Bangladesh, exemplifies what its current Governor refers to as "developmental central banking". Bangladesh Bank's starting point for action on sustainable development has been financial inclusion, where the Bank has deployed its financial, regulatory and persuasive powers to advance financial services to many disadvantaged individuals, as well as offering low cost refinancing to commercial banks' lending to the rural economy. More recently, the Bangladesh Bank has extended this approach by establishing requirements that banks direct a minimum proportion of their loans to green projects such as renewable energy and energy efficiency.[130] Importantly, positive linkages have been identified between the drive for inclusion and financial stability, with green finance identified as a tool to reduce long-term systemic risks.[131]

The Central Bank of Kenya, also acting to improve financial inclusion, has led the way in harnessing the power of mobile phone technology in banking, achieving the world's highest level of mobile-based financial payments. Based on an understanding of the new business model and the risks involved, the Central Bank took a relatively hands-off approach to enable a new generation of non-bank institutions and platforms to enter the market.[132] Today Kenya's technology-charged financial system has become more diversified and competitive, as well as innovative in providing an ever-broadening range of financial services to more people.

Inclusion has provided the foundations for a wider focus on green finance. Kenya's M-KOPA programme has demonstrated the potential for pay-as-you-go mobile payments for solar energy technology in under served, poorer communities – and points to untapped opportunities for crowd-sourcing and peer-to-peer financing.[133]

*Larger emerging economies have also taken a strategic approach to the relationship between the financial system, regenerating natural capital and mobilizing finance for new green industries.* The Banco Central do Brasil (BACEN), recognizing the critical role of natural capital in supporting the country's development, has initiated seven specific measures to strengthen the management of socio-environmental risks. In 2011, it was the world's first bank*ing regulator to request that banks monitor environmental risks as part of the implementation of Basel III.*[134] In the context of continued weak enforcement of environmental regulations, the China Banking Regulatory Commission has established "Green Credit Guidelines", requiring banks to report on environmentally-related credit risk in their main portfolio, as well as specific green loans.[135]

> "Bangladesh Bank and a number of other developing economy central banks have been trying to address the risks of instabilities and imbalances at sources, by promoting socially responsible inclusive and environmentally sustainable institutional ethos in financing."
>
> Dr Atiur Rahman*, Governor, Bangladesh Bank

*The starting point for financial system rule-makers in developed countries tends to be prudential risk, but policy considerations and broader societal expectations are also taken into account.* In 2009, the US Securities and Exchange Commission issued guidance for companies to disclose climate change issues to their investors: the focus was on material risks to shareholder value.[136] Policy alignment, however, provides a driving force in some cases.

The Bank of England's exploration of climate change and finance is focused through a prudential lens, but is also responsive to the UK Government's Climate Change Act. Beyond this, measures have been taken to address the wider interests of diverse stakeholders, including customers and intended beneficiaries. The UK's early move in requiring pension funds to disclose their social and environmental policies is a case in point, as is France's recent approval of measures to increase the disclosure of sustainability factors (particularly on climate change). The Swiss financial community, facing significant challenges resulting from dramatic changes to its regulatory and market landscape, has initiated a national-level examination of sustainable finance as a new source of international competitive advantage.[137]

*Differences between developing, emerging and developed countries are at times marked, but may not always be as different as they seem.* The Bangladesh Bank argues that "developmental central banking" concerns the relationship between policy objectives and its conventional

## Box 8 Focus on Brazil: Banking Regulations and Lender Liability[138]

### Why?

Brazil's economy is significantly dependent on its natural capital, which provides a powerful incentive for considering sustainability risks and opportunities within the financial system.

### What?

Action started with market innovation, notably the launch of the BOVESPA Stock Exchange's Corporate Sustainability Index (ISE) in 2005. Since 2008, the Banco Central do Brasil (BACEN) has complemented this market-driven activity with measures to strengthen the management of socio-environmental risks. One important factor has been a decision by the Superior Court of Justice in 2009, which suggested that financial institutions could face potentially unlimited liability for environmental damage caused by borrowers. In 2011, BACEN was the world's first banking regulator to request banks to monitor environmental risks as part of the implementation of Basel III's Internal Review for Capital Adequacy. Building on a voluntary Green Protocol from the banking sector and considerable dialogue in 2014, BACEN introduced requirements for all banks to establish socio-environmental risk systems based on the principles of relevance and proportionately. Alongside this, FEBRABAN, the Brazilian Federation of Banks, has introduced a self-regulation framework.[139]

Assessment by FEBRABAN of financial flows going into the green economy as bank loans, indicate that member banks allocated 8.8% of their balance of operations with corporate clients to green investment in 2013 and 9.5% in 2014.

### Lessons

Brazil's experience highlights the need for a coordinated discussion of socio-environmental factors within the Basel framework. In addition, the next steps will develop a standardized assessment methodology and automated data collection system to monitor flows of finance green economy sectors. Finally, reducing legal uncertainty for environmental damage in terms of lender liability could remove a significant barrier to channelling capital for sustainable development.

role in ensuring a sound monetary system, saying that monetary stability is not only an input into the country's development, but an outcome of balanced, equitable economic development.[140] In the wake of the financial crisis, the Dutch Central Bank also demonstrated the close relationship between prudential goals and other policy objectives in updating its mission to "safeguarding financial stability and contributing to sustainable prosperity in the Netherlands".[141] The focus of Brazil's Central Bank's activities is fundamentally driven by a risk-based approach to help realize its core financial and monetary stability mandates.[142]

## 3.3 ENHANCING MARKET PRACTICE

*Enhanced market practice has proved the most popular approach to internalizing sustainable development into financial decision-making.* Introducing new rules to improve the disclosure of material information on sustainable development has been the starting point for many countries, notably through their stock exchanges. The Johannesburg Stock Exchange (JSE) and Brazil's BOVESPA stock exchange were two of the earliest innovators, with BOVESPA linking requirements on reporting and substantive performance with access to capital-raising opportunities, and the JSE linking comparable requirements to the King Code of Governance. Since then, 24 stock exchanges around the world have committed to enhanced disclosure through their membership of the Sustainable Stock Exchange Initiative, co-convened by UNEP, UNCTAD and the UN Global Compact. The Singapore Stock Exchange plans to impose penalties for poor reporting.[143]

Disclosure of sustainability performance by institutional investors has also followed. In some instances, this has been driven by statutory requirements, such as through the UK Pensions Act 2000 and the 2015 French Energy Transition Law which requires investors to report how their investment decision-making process takes social, environmental and governance criteria into consideration, and the means implemented to contribute to the financing of the ecological and energy transition.[144] Voluntary assessment and reporting frameworks have also been important, such as the UN-backed Principles for Responsible Investment at the international level.

However, common disclosure approaches have proved elusive. In a submission to the Inquiry, the Climate Disclosure Standards Board (CDSB) suggests that there are almost 400 different provisions that directly or indirectly affect the reporting of complementary information, such as environmental and social requirements.[145] Finally, reporting guidance may still not include material issues, such as the impact of natural disasters or the potential for asset stranding in high carbon sectors.

> "The central bank time horizon is relatively short - but the real challenges to prosperity and economic resilience from climate change will manifest well beyond this. We face a tragedy of horizons."
>
> Mark Carney, Governor, Bank of England[146]

According to Bloomberg data, 75% of the 25,000 listed companies assessed did not disclose a single sustainability data point.[147] Only 39% of the world's larger listed companies (defined as companies with a market capitalization in excess of US$2 billion – a total of 4,609 companies) currently disclose their GHG emissions.[148]

In a large part, these measures to improve transparency in the financial system are linked with wider measures to improve governance, both within corporations and financial institutions. The Inquiry's work in Colombia highlighted that the country's Codigo Pais framework for corporate governance also provides the basis for further integration of environmental and social issues. The governance of pension funds is steered by an array of statutory and common law measures often linked to the fiduciary duty of intermediaries. A number of countries, such as South Africa and the UK, have clarified that this obligation now includes the consideration of material sustainability factors in the investment process. A detailed review of practice in eight countries – Australia, Brazil, Canada, Germany, Japan, South Africa, and the US – has concluded that "a failure to consider long-term drivers of investment value including environmental, social and governance issues in investment practice is a failure of fiduciary duty."[149] In addition, the review found that the integration of sustainability factors enables better investment decisions and improves performance.

The improved functioning of capital markets themselves is a strategic focus of policymakers (for example through the European Union's Capital Markets Union process). This is now extending to how capital markets can be enhanced to mobilize capital for the green economy. The rapid growth in the issuance of green bonds – where proceeds are linked to financing sustainable activities – has been accompanied by market-based principles, standards and associated due diligence and reporting mechanisms. The People's Bank of China will soon release the world's first set of policy-sponsored criteria for green bonds.[150]

### Box 9 Focus on the UK: Strengthening Transparency and Risk Management[151]

#### Why?

The UK's focus on strengthening transparency and risk management evolved from a growing recognition in the late 1990s of the need for financial institutions to make informed decisions on critical sustainability issues.

#### What?

Growing evidence of the relevance of environmental and social factors to investment performance prompted a requirement in the 2000 Pensions Act for funds to disclose whether they included social, environmental and ethical factors into their investment processes. A 2014 review of fiduciary duties by the UK's Law Commission concluded that pension fund trustees may take account of any financial factor that is relevant to investment performance and should take account of financially material risks, including risks to a company's long-term sustainability.[152]

Disclosure of climate risks has been another priority issue. Corporate disclosure of greenhouse gas emissions (GHGs) grew initially as a voluntary practice, with mandatory requirements introduced in 2013. More recently, growing concern over the strategic implications of climate change for asset valuations provided the backdrop for the Bank of England's Prudential Regulatory Authority to carry out an assessment of the implications of climate change for the 'safety and soundness' of insurance companies and the protection of policyholders.[153]

#### Lessons

In the UK, a distinctive dynamic has developed, with civil society often setting the agenda for financial innovation in the marketplace. Policy has tended to follow market experience – translating good practice into standard practice. Questions of time horizons remain an unresolved issue.

In addition, growing emphasis is being placed on the use of sustainability information in market analysis, notably sell-side investment research and credit ratings.[154] Investor demand is growing for greater transparency in the credit rating process to ensure that long-term environmental and social factors are included. Responding to investor demand and the increasing materiality of sustainability factors, rating agencies have published research on critical environmental factors. US-based Standard & Poor's Ratings Services has published a growing number of reports on climate change and it has identified climate change as one of the two megatrends, alongside demographics, affecting the risks facing sovereign bonds, highlighting that "the poorest and lowest rated sovereigns will bear the brunt of the impact".[155]

Growing attention is turning to the relationship between the international Basel Accords on banking regulation and the mobilization of sustainable finance. Following the crisis, concerns were raised that tightening capital requirements could have negative impacts on the financing for capital-intensive assets such as renewable energy. Recent analysis has highlighted the potential for integrating environmental risks into Basel's Pillar 2: Supervisory Review (for example through stress testing) and Pillar 3: Market Discipline (through enhanced disclosure).[156] This is supported by national practice, such as in Brazil.

> "It is essential that the financial system as a whole takes climate risk into account, anticipates ambitious targets and integrates this into investment decisions."
>
> Laurent Fabius,
> Foreign Minister, France[159]

## 3.4 HARNESSING THE PUBLIC BALANCE SHEET

*Incentivizing sustainable finance through the use of the public balance sheet has been a feature in every country reviewed by the Inquiry.* Most advanced in the use of fiscal instruments is probably the US, with a range of federal and state-level incentives focused mainly on encouraging investment in infrastructure. Tax relief on the income from municipal bonds is a long-standing feature, designed to encourage lending for investment in local infrastructure. Others are more specifically targeted at environmental finance, including tax credits for renewable energy investments and the tax-advantaged Clean Renewable Energy Bonds.[157] China's plan to drive forward a domestic green bond market, notably to finance infrastructure, similarly includes plans to offer partial tax exemptions on investor's gains.

Incentivizing private capital through the leveraged use of public funds (i.e. guarantee facilities) and public sector balance sheets has become core to the strategies of many development finance institutions and other government and international financing vehicles.[158] This is not part of the Inquiry's scope, but country engagement has highlighted its importance. Indonesia, in its 10-year Roadmap for Sustainable Finance, has spelled out its intention to "*increase the supply of sustainable financing through regulatory*

*support and incentives, and by encouraging innovation through targeted loans and guarantee schemes, green lending models, green bonds, and a green index". Estimates of potential leverage ratios vary, with the World Bank Group projecting conservative ratios of the order of 1:2-3,*[160] and the European Commission's new pan-European infrastructure investment plan more ambitiously planning to catalyse more than EUR300 billion financing from an initial public fund allocation of EUR21 billion.[161] A small number of sovereign wealth funds are adopting environmental goals into their investment criteria.

*Historically, the management of central bank balance sheets have generally not been viewed through a sustainability lens.*[162] Central bank balance sheets have expanded rapidly over the last decade, particularly in those countries that have undertaken quantitative easing, notably across parts of the OECD and in China. The People's Bank of China has, for example, used its balance sheet to make equity investments in China's policy-directed investment vehicles.[163] This remains a contentious area, but examples of ways in which sustainability could be incorporated in a prudent fashion include the choice of assets for collateral, the management of central bank investment portfolios (where central banks could learn from practices in the institutional investment world), refinancing facilities and asset purchase programmes.[164] In Bangladesh, banks providing loans for green projects can access the Bangladesh Bank's refinancing arrangements and pass on preferential interest rates to their clients.[165] In France, the Prime Minister's think tank,

## Box 10 Focus on India: From Priority Lending to Green Bonds[166]

### Why?

India's focus is on harnessing the financial system to provide the capital required to bring clean, affordable and reliable supplies of water and energy to all of its 1.3 billion citizens. India needs approximately US$400 billion over the next 3-5 years to deliver its aspirations for clean energy, energy efficiency, sanitation and other key national priorities.

### What?

A core financial policy in India is the Priority Sector Lending (PSL) requirement for banks to allocate 40% of lending to key sectors such as agriculture and small and medium-sized enterprises. In April 2015, the Reserve Bank of India (RBI) included lending to small renewable energy projects within the PSL targets. In addition, the RBI has a vision of introducing market for trading PSL obligations, incentivizing lower cost delivery.[167]

Efforts to strengthen business responsibility in the financial sector have also been stepped up, with the Indian Banking Association introducing the National Voluntary Guidelines for Responsible Finance in 2015, based on the government's development priorities. The securities regulator, SEBI, also requires the 100 largest listed companies to publish annual 'business responsibility reports'.

Harnessing domestic and international debt and equity capital markets is a top priority. Green bonds in India are at a nascent stage, and to move ahead, regulatory adjustments could be needed. In addition, targeted public finance will be required, notably to provide credit enhancement and support tax-efficient vehicles for investing in energy service companies (ESCOs).

### Lessons

India's experience shows how sustainability factors can be incorporated into existing policy requirements and the need to tailor international practice for local circumstances.

France Stratégie, has explored how monetary policy could support low-carbon investment at a time of fiscal constraints, focusing on the inclusion of climate factors into the European Central Bank's quantitative easing programme.[168]

*The financial system is the recipient of, and conduit for, significant public financial support, most of which has not been assessed to optimize its contribution to sustainable development.* Such support has been particularly visible in the wake of the financial crisis, where governments stepped in to bail out systemically important financial institutions. A range of cash transfers, tax reliefs and guarantees are provided through the financial system, for savings, investment, lending and insurance. However, little analysis has been undertaken to examine the linkages with environmental and social performance. For example, mortgage tax relief – one of the largest single sources of subsidy in a number of countries – has not been tied to recipient investments in energy efficiency measures.

## Box 11 Focus on the US: Sub-national Innovation[169]

### Why?

In the US, action within the financial system has focused on increasing financing that delivers public goods through fiscal incentives, as well as market-led initiatives to improve transparency and harness capital markets.

### What?

Federally, the key levers for change include a range of fiscal incentives, dominated by tax benefits rather than direct subsidies, along with capital markets guidance on climate disclosure through the Securities and Exchange Commission (SEC). This is matched by the Sustainability Accounting Standards Board, which aims to provide robust disclosure guidance for corporations using the SEC's definitions of materiality.

At the state-level, leading insurance regulators are starting to explore the implications of climate risks, both in terms of underwriting and investment management. A number of states have also established dedicated green banks to promote clean energy and energy efficiency investments including California, Connecticut, Hawaii and New York.

The US has also taken the lead in developing new liquid financial instruments targeted at green assets, including both green bonds and yieldcos, investment trusts holding renewable energy assets that are listed on equity exchanges. Investor interest in impact investing – which seeks environmental and social performance alongside financial returns – is also growing. In 2013, the Obama Administration launched the National Impact Initiative (NII) to expand the use of impact investing.

### Lessons

The US experience has highlighted the importance of innovation at the sub-national level, for example by municipalities and states. In addition, the dynamic interaction of citizens and financial markets can drive new products aligned to sustainability. Finally, federal action has been important for fiscal incentives and improvement of market conduct, notably through broader disclosure of sustainability factors.

In France, the value of tax exemptions for a range of savings products amounted to some EUR11 billion. Around 70% of this is linked to the official goal of helping to finance the economy by encouraging social housing, local infrastructure and SMEs, according to a study from the 2 Degrees Investing Initiative, which identified that scope exists to align these incentives with sustainable finance.[170] While no global estimates of these sums exist, the available literature indicates that they certainly extend to many hundreds of billions of dollars annually, and may well be in the trillions of dollars globally.[171] Public spending constraints point to the need to ensure that fiscal support should be optimized to achieve well-specified sustainability outcomes.[172]

## 3.5 POLICY-DIRECTED PERFORMANCE

*Measures that change the legal requirements facing financial institutions to meet policy goals are perhaps the most contentious, but are widely used, particularly in developing countries and also less explicitly in some developed economies.* This cluster of approaches concerns policy measures that go beyond improvements to market practice or providing public financing, and introduces requirements, and in some instances prohibitions, that shift capital allocation. Such measures in effect introduce new performance criteria into financial decision-making, which might reduce or increase risk-adjusted returns.

Risk-pricing is key to the cost of capital, but this can result in key sectors of the economy (such as SMEs) and critical social groups (notably low-income households) being unable to gain access to finance because of real (and perceived) risks. In relation to finance for green investment, this is intensified by the need to test and demonstrate innovation, and factor innovation into business models, technologies and lifestyles. Such innovation is inherently risky – track records are limited, and there is a necessarily high initial failure rate as different approaches are tested.

State-directed priority sector lending programmes (PSL), have been widely used to achieve the goal of increased access to capital for critical sectors (such as SMEs and agriculture), that are underserved by the financial system.[173] PSLs have a mixed track record, with evidence of well-run programmes helping to shape the growth of key industrial sectors, whereas some other countries have experienced higher non-performing loans in targeted sectors.[174] Currently a range of programmes is in place, notably in Asia, and the focus of the Inquiry has been to understand how these programmes can help close the access to finance gap for green assets.

India has, for many decades, had priority sector requirements for the banking sector: currently 40% of bank lending has to be allocated to key sectors, such as agriculture and SMEs. In early 2015, the Reserve Bank of India revised the criteria to include loans to sanitation, drinking water facilities and renewable energy under the priority sector ambit, with plans to introduce greater flexibility in how the levels of priority lending are achieved.[175] In addition, since 2002, Indian insurance firms have been required to satisfy quotas for the extension of insurance coverage to low-income and rural clients.

While India may be the most visible example of policy-directed financing, it is by no means alone. The US's Community Reinvestment Act (CRA), originally enacted in 1977, is one of the most widely referenced measures deployed to enhance lending to communities hitherto "redlined" by banks. Indeed, banks were sometimes arbitrarily denying or limiting financial services to specific neighbourhoods, home to poor and ethnic minority residents.[176]

Capital requirements for bank loans have also been adjusted to reflect wider economic priorities. International cooperation between the World Bank, the World Trade Organization and the Bank for International Settlements generated adjustments to the Basel III rules to offset potential negative impacts on trade finance.[177] In the EU, for example, an SME

Supporting Factor was introduced into the post-crisis banking regulation, allowing a reduction in capital requirements with the aim of freeing up regulatory capital to deploy for additional SME lending.[178] The Bangladesh Bank's priority lending requirements to rural enterprises and for green finance are linked to capital adjustments and preferential refinancing opportunities. By 2015, all banks in Bangladesh are required to allocate 5% of loans to green projects, including renewables, energy efficiency and waste management. Bangladesh Bank allows banks that provide loans to key green sectors to treat these as high quality assets in terms of CAMELS (Capital adequacy, Asset quality, Management quality, Earnings, Liquidity and Sensitivity to Market Risk).Indonesia's financial regulator is also considering variations in capital provisioning reductions for green lending.[179]

Strategies to direct finance to priority sectors rarely involve exclusively regulatory measures, more often blending fiscal and other incentives. South Africa's Financial Services Charter (FSC), which focuses on empowering the country's historically disadvantaged majority through financial inclusion, uses an incentive model that makes compliance with the charter a requirement to bid for public procurement contracts for financial services.[180] However, they are also provided with concessional refinancing and capital provision variations to offset additional risk.

### Box 12 Focus on France: A National Strategy for Transition[181]

#### Why?

France has focused on deepening the integration of sustainability factors in the financial system as part of its strategy to deliver the ecological transition, particularly in the energy sector.

#### What?

The 2010 Grenelle II requirements on corporate sustainability reporting were advanced further in November 2013 with the launch of a White Paper on Financing the Ecological Transition, a joint initiative of the Ministry of Ecology and the Treasury.[182] The follow-up to the White Paper has been galvanized by the approach of the COP 21 climate change conference in Paris. New disclosure requirements were agreed in May 2015 requiring investors to include in their annual reports how they manage sustainability factors, including the risks of climate change and their contribution to the international goal of limiting climate change.

#### Lessons

A key aspect in the evolution of France's approach to financing the transition has been the dynamic between government strategy, market initiative and independent analysis. The reality that a growing number of financial institutions had started to publish their 'carbon footprints' and set targets for decarbonisation provided the basis for the new rules for universal disclosure.

Finally, liability regimes are also a critical tool for driving a preventive approach to environmental risk – if designed correctly. Governments may need to adjust legal regimes to allow for limited environmental liability for lenders where there is a breach of the expected duty of care by the financial institution. If legal regimes are too weak, there is insufficient incentive for precautionary action. The prospect of unlimited liability, however, can have unintended consequences, paradoxically disincentivizing responsible behaviour.[183] China is currently exploring introducing a proportionate tightening of bank liability for pollution damage to drive strengthened due diligence in the credit process. But questions of liability do not only affect banks. Discussion is growing over whether pension fund trustees could be in breach of their fiduciary duty if they do not consider material sustainability factors, such as climate change. In addition, liability risk for environmental impacts has long been an issue for the insurance sector, with the potential for climate change to stimulate litigation for those claiming loss from physical impacts.

## 3.6 ENCOURAGING CULTURAL TRANSFORMATION

*Encouraging a financial culture that supports sustainability is an essential complement to more specific policy, regulatory and fiscal measures. The financial crisis highlighted the vital importance of culture – the body of values, capabilities and incentives that drive the behaviour of both financial professionals and customers.* Challenges remain: a 2015 study of over 1,200 financial practitioners in the US and UK found that 47% of respondents thought it "likely that their competitors have engaged in unethical or illegal activity in order to gain an edge in the market"; and 32% of employees with less than 10 years of experience said they would "use insider information to make a guaranteed profit if there were no chance of getting caught."[184]

*Following the crisis, policymakers introduced a range of measures to shape a financial culture that protects the stability of the system. This has included controls on compensation and re-*

### Box 13 Market Composition and Sustainability

The impact of "market composition" on sustainable development is not well understood but has emerged as a potentially critical cross-cutting theme. Key factors highlighted include levels of market concentration, the size of financial institutions, the heterogeneity of business models, the degree of localization of financial institutions (e.g. proximity to borrowers) and the effect of ownership.[185]

Opinions vary considerably. On the matter of scale, for example, a recent international survey of pension funds found that "the size of a pension fund is a strong indicator of good outcomes for beneficiaries", adding that "scale does not guarantee responsible investment will be pursued, but bigger schemes consistently take it more seriously."[186] On the other hand, the Institute for Social Banking highlights the relevance of "smallness" in pointing out the importance of proximity and co-dependency of the financial institution on who they lend to or invest in, and more broadly the communities in which they are based.

Market diversity and lower levels of concentration, similarly, should encourage competition and innovation, and greater attention to customer and broader stakeholder interests. Mobile payments systems as enablers of financial inclusion, for example, have advanced most rapidly where the regulator encouraged, often-disruptive competition, such as in Kenya.

Policymakers can encourage the establishment of certain types of financial institutions to fill critical market niches. The key added value of green banks, for example, is "their capacity to foster institutional innovations and partner with other financial and regulatory institutions to increase the diversity and depth of local financial markets in order to enhance the domestic supply of green finance."[187] Indeed, diversity can be seen as a key feature of overall system resilience.[188]

*muneration practices and the tightening of governance frameworks for financial conduct.* As yet, these reforms have not explicitly focused on the sustainability dimension. Here, market innovations are emerging as a way of rebuilding trust. In the Netherlands, bankers now have to pledge an oath to balance the interests of all stakeholders: employees, shareholders, clients and society at large.[189] Interestingly, the oath is explicitly linked to the Dutch Bankers Code that involves licensing conditions. Furthermore, the banking association has also adopted a "societal statute" setting out its role in helping society overcome challenges such as climate change and health care.[190]

*Policymakers have a rich tradition of values-based finance to draw upon – institutions and products which explicitly seek to deliver social, ethical and environmental as well as financial returns.* Impact

> "Culture relates to the implicit norms that guide behaviour in the absence of regulations: it is how people react not only to black and white, but to all shades of grey. Culture relates to what "should" I do and not to what "can" I do."
>
> William Dudley, President and CEO, Federal Reserve Bank of New York[191]

## Box 14 Focus on South Africa: Compacts and Governance innovations[192,193]

### Why?

In the post-Apartheid period, a series of black economic empowerment sector charters were developed through structured engagement between the government, labour unions and industry to advance transition to a more inclusive economy. In addition, South Africa has sought to meet or exceed best international practice in advancing sustainability governance across the financial sector in keeping with its ambition to retain leadership as an emerging country financial centre.

### What?

South Africa has advanced along two tracks to encourage sustainable finance: first, through the Financial Sector Charter (FSC), and second, through a number of governance innovations focused mainly on upgrading financial responsibilities and disclosure.

The FSC, although focused on South Africa's specific priorities, provides an excellent case of building a broad social compact to address policy objectives through profitable, financial services incentivized by public visibility and the economic opportunities associated with public procurement. The second track involved a number of corporate governance instruments focused mainly on information and disclosure. South Africa's corporate governance King Code, with the sustainability-focused reporting requirements of the Johannesburg Stock Exchange, is acknowledged as a standard-setter. Other innovations include the requirement for pensions trustees to consider sustainability factors (Pensions Act, Regulation 28), and the Code for Responsible Investing in South Africa (CRISA).

### Lessons

Two particular lessons:

- Social compacts such as the FSC can be effective in framing a sector-wide approach to aligning policy and market development.
- Governance innovations are important but alone may not deliver significant changes in valuation or capital allocation.

investing is pioneering ways of delivering both financial and non-financial value and attracting the attention of policymakers.[194] The social banking movement, exemplified by the Dutch bank Triodos, involves thousands of financial institutions around the world affecting millions of people.[195] Many of these are long-standing approaches, such as the co-operative movement, as well as faith-based finance, notably in the Christian and Islamic communities.

Values-based finance need not, of course, place a priority on environmental sustainability. In Indonesia, 95% of the US$1.1 billion invested sustainably is essentially Sharia-compliant, thus involving negative screens preventing, for example, alcohol-related investments.[196] Islamic finance is, however, grounded in the core principle of shared risk between suppliers and users of finance, which is now being applied to the development of "green sukuks" as part of the wider green bond trend.[197]

Numerous studies highlight the link between a values-based institutional culture and financial success in business.[198] Some leading financial institutions are also guided by explicit values. Some institutional investors, such as the California Public Employees Retirement Scheme (CalPERS), are developing 'investment beliefs' that include how they view the management of natural and human capital relating to financial risks and opportunities.[199] Others have a narrower context-specific focus, evoking cultural, religious national and other goals. Often action is taken from a convergence of

## Box 15 Focus on China: Establishing a Green Financial System[200,201]

### Why?

In the face of urgent environmental challenges, policy and regulatory weaknesses in the real economy and longer term economic opportunities, China has seen the potential for embedding environmental considerations in its financial market development.

### What?

Initial developments from 2007 focused on improving the environmental impact of bank lending through the Green Credit Guidelines of the China Banking Regulatory Commission, which evolved from an initial principle-based approach in 2007 to astandardized, metrics-driven performance assessment of all licensed banks.

The People's Bank of China established a Green Finance Task Force in mid-2014, co-convened with the Inquiry, resulting in 14 recommendations across four broad themes: information flows, legal frameworks, fiscal incentives and institutional design. Some of these proposals are now being further developed under an expanded Green Finance Committee, including steps to:

- Make environmental disclosure mandatory under China's securities law.
- Extend mandatory environmental liability insurance.
- Develop government-sponsored green bond guidelines, drawing heavily on international market practice.
- Establish a firm legal and judicial basis for enhanced environmental lender liability.

### Lessons

- Strategic, collaborative initiatives such as the Green Finance Task Force can be effective.
- Strength in openness to using a range of instruments, including fiscal, legal, regulatory and administrative, as well as 'soft' policy guidance, to encourage market innovation and alignment.
- Potential in linking"green finance" to overall financial market development.

fundamental beliefs with a new appreciation of how environmental factors impact investment risk. This is exemplified by the more than 200 institutions, including large universities, and major investors such as AXA and the Norwegian Pension Fund, that have pledged to cut back or eliminate investments in coal or fossil fuels.[202]

*Culture cannot be mandated, but policy measures can help to support the evolution of behaviours that in turn support sustainable development.* A first priority is to encourage moves that link individual compensation with performance in terms of long-term sustainability.[203] Action to enhance the current skill set of financial professionals and regulators with regard to sustainability is another area of focus. Switzerland's contribution to the Inquiry highlighted that "an indispensable and transversal requirement for facilitating the alignment of the financial system with sustainable development is a paradigm shift in business, economics and finance education."[204] Policy can encourage professional associations to incorporate sustainability into their curricula and continuing professional development programmes. The Chartered Financial Analyst (CFA) Institute is expanding its coverage of sustainability issues in response to client demand.[205] Indonesia's Sustainable Finance Roadmap places a particular priority on improving the sustainability skills of both professionals and supervisors.[206] Policymakers can also take action to level the financial playing field, so that values-based finance is not disadvantaged by regulations that have been designed with conventional financial structures in mind.

*Culture and associated behavioural change evolves through engagement with others, with diverse values, capabilities and needs.* South Africa's Financial Sector Charter was one of a number of charters drawn up to shape the connection of key industries to the aspirations of a post-apartheid South Africa. While these charters have institutional arrangements and an historical context specific to the country, they nevertheless provide an inspiration and lessons on the importance and potential of such broader social compacts. This conclusion was also reached in a study conducted alongside the Inquiry by the South African Bankers Association. Indeed, differently configured, but broadly comparably mandated task forces and committees have been established in a number of other countries in which the Inquiry engaged, such as the China Green Finance Committee[207] (the successor to the Green Finance Task Force co-convened by the People's Bank of China and the Inquiry), the Working Group established under the Indonesian Financial Services Regulator (OJK), the Swiss Sustainable Finance initiative,[208] and the Dutch multi-stakeholder process convened by the Utrecht Sustainable Finance Lab.[209]

> "The Financial Services Charter not only sets objectives and commitments that directly serve South Africa's historically disadvantaged majority, but helped to align the financial community to the country's broader values, ambitions and goals."
>
> Nicky Newton-King*, Chief Executive, Johannesburg Stock Exchange

## 3.7 UPGRADING GOVERNANCE ARCHITECTURE

*Governance architecture can promote the development of a financial system that is sensitized to sustainable development.* However, this approach is currently underdeveloped based on our research. Financial governance is a multifaceted, complex topic. On the national level, financial governance concerns the mandates, levels of autonomy and underlying institutional arrangements of governing institutions, including central banks and financial regulators. The financial crisis, in particular, has given rise to questions about the circumstances under which central bank independence might be compatible with coordinated action with government to achieve priority macroeconomic objectives.[210]

*The Inquiry has examined the challenges of mandates, norms and capabilities of relevant governing institutions in taking sustainable development more centrally into account.* Typically, particularly in developed economies, mandates of central banks and financial regulators, and most financial standard-setters, focus on financial and monetary stability, alongside varied aspects of market conduct. This is often framed by broader statements of social purpose, as in the Bank of England's mandate "to promote the good of the people of the United

FIG 5 HOW SUSTAINABILITY RELATES TO THE MANDATES OF CENTRAL BANKS AND FINANCIAL REGULATORS

| AGENT | MANDATE | LINKS TO SUSTAINABILITY | EXAMPLES FROM PRACTICE |
|---|---|---|---|
| **Central Bank**<br>*Focused on monetary and financial stability* | *Financial stability* | Climate impacts may pose significant costs to the real and financial economies, creating volatility and disorderly market transitions. | **UK:** the Bank of England's Financial Policy Committee is monitoring climate risks. |
| **Financial regulator**<br>Focused on:<br>• *Market efficiency*<br>• *Prudential regulation*<br>• *Conduct of business* | *Monetary policy* | Monetary policy operations can impact on the deployment of capital for the low-carbon economy. | **Bangladesh:** The Central Bank is using monetary policy instruments (including concessional refinancing) to promote sustainability objectives. |
| | *Banking regulation and supervision* | Socio-environmental and climate factors can influence these prudential risks in banking at the asset, institutional and market levels. | **Brazil:** In 2014, the Brazilian Central Bank introduced requirements for all banks to have environmental and social risk management systems in place. |
| | *Insurance regulation and supervision* | Natural disasters and the physical impacts of climate change are having increasing impacts on the re/insurance industry. Insurance sector investments could also be impacted by the low-carbon transition. | **US:** In 2012, state regulators, working through the National Association of Insurance Commissioners provided guidance on questions to ask insurers on potential impact of climate change on solvency. |
| | *Pensions regulation and supervision* | Environmental and social issues can impact theperformance of investments, therefore understanding these risks and sources of value may become part of fiduciary duty. | **South Africa:** The South African Pensions Act has clarified that prudent investors must consider environment factors that may materially affect long-term performance. |
| | *Securities regulation* | If companies do not appropriately disclose risks posed by environment and climate change, markets are not able to respond to them, and market failures may arise. | **Singapore:** In 2012, the Singapore exchange released guidance on sustainability reporting for listed companies, promoting climate. |
| **Standards bodies**<br>*Focused on providing common frameworks for reporting business performance* | *Accounting and financial reporting standards* | Sustainability issues may pose material risks and opportunities to business value through multiple channels, and traditional standards may not adequately reflect how these impact the firm. | **Global:** The Climate Disclosure Standards Board (CDSB), Sustainability Accounting Standards Board (SASB), and others are developing new frameworks for sustainability and climate accounting and disclosure. |

Kingdom by maintaining monetary and financial stability".[211] The Bangladesh Bank has a comparable mandate to "manage the country's monetary and financial system with a view to stabilizing the internal and external value of Bangladesh Taka conducive to rapid growth and development of the economy".[212]

The new requirement from the Central Bank of Brazil, that all banks demonstrate adequate socio-environmental risk management flows from its core functions as a prudential bank regulator. The Bangladesh Bank argues that its support for rural enterprises and green finance contributes to financial and monetary stability. The Bank of England's prudential review of climate risks to the UK's insurance sector is based on a connection between its core prudential duties and the UK Climate Change Act. These examples highlight the relevance of overarching policy-focused legislation – even where the central bank has been legislated independence from government. This is to be compared to the situation of the People's Bank of China, which beyond its core focus on financial and monetary stability and market conduct, is required by law to "perform other functions prescribed by the State Council".[213]

> "In Indonesia we developed a Sustainable Finance Roadmap together with industry. We asked them to develop a common definition of objectives to create a sense of belonging, commitment and purpose together with government."
>
> Mulya E. Siregar, Deputy Commissioner of Banking Supervision, Indonesia Financial Services Authority[214]

## Box 16 Focus on Indonesia: A National Roadmap for Sustainable Finance[215,216,217]

### Why?

Indonesia has recognized the link between the need to mobilize about US$300-530 billion annually to meet its national priorities, much of which relates to environmentally sensitive areas such as agriculture, forestry, energy, mining and waste, and the need to accelerate the development of its domestic financial system.

### What?

Efforts to embed environmental considerations into banking regulations date back to 1998, but had only modest effects. In late 2014, OJK launched its Roadmap for Sustainable Finance, the country's first attempt to map out the developments needed to advance sustainable finance through 2019. The Roadmap covers banking, capital markets and non-bank financial services sector, and includes measures to:

- *Increase the supply of sustainable financing* through regulatory support and incentives, targeted loans and guarantee schemes, green lending models, green bonds, and a green index.
- *Increase demand for sustainable financing products* through raising awareness among market players about environmental risks, risk management and mitigation practices.
- *Increase oversight and coordination of sustainable finance* implementation through requirements to adopt social and environmental risk management policies and associated public disclosure

### Lessons

The Roadmap is a potentially powerful device for mobilizing public and private actors behind the development and implementation of forward-looking plans.

On the international level, examples of governance architecture include the governance arrangements of key international organizations[218] and their process for agreeing to and implementing international standards (i.e. the Basel Committee on Banking Supervision[219]). The Bank for International Settlements is typical in having "…to serve central banks in their pursuit of monetary and financial stability, to foster international cooperation in those areas and to act as a bank for central banks".[220] The International Organization of Securities Commissions, similarly, exists to advance "…standards of regulation, oversight and enforcement in order to protect investors, maintain fair, efficient and transparent markets, and seek to address systemic risks".[221]

*Experience suggests that broader consideration of the sustainable development impacts of financial decision-making may be possible through customary norms, capabilities and leadership.*

Actions by central banks, financial regulators and standard-setters are influenced by the practices of their peers and, less directly, societal concerns. For some, this means a firm resistance to what they see as "mandate drift", and an associated unwillingness to consider the substantive impact of financial decision-making beyond market conduct issues, and their short to medium-term feedback effects on stability.[222]

For most, however, the Inquiry has noted a shift in underlying norms and practices. The Monetary Authority of Singapore, citing Singapore's new legislation on trans-boundary haze that penalizes businesses acting illegally in Indonesia and generating air pollution over Singapore, recognized the potential for engaging with the financial sector that supports such investments. China's high-profile moves to develop a more systematic approach to green finance has awakened interest elsewhere, stimulating the establishment of a comparable initiative on green finance opportunities in the Hong Kong SAR, and forming the basis of a research collaboration between the People's Bank of China and the Bank of England on potential areas for international collaboration, possibly through the G20.

Indeed, the range and depth of international efforts has grown in the past year, complementing longer standing initiatives such as the Sustainable Banking Network and the Sustainable Stock Exchange initiative.

## Box 17 Emerging International Action

Examples of international cooperation are growing. Two recent examples stand out:

- **Energy Efficiency:** These investments are often the cheapest and fastest way of delivering pollution reduction – but an array of institutional barriers prevent deployment, not least in the financial system. In December 2014, the G20 launched the Energy Efficiency Financing Task Group. It will present recommendations to the G20 Energy Sustainability Working Group, which will then be presented to the G20 Leaders' Summit in Turkey in November 2015. Critical issues include the need for common benchmarks and standards, aggregation of investments, the use of third party mechanisms and the alignment of accounting rules and regulatory requirements.[223]
- **Financial Stability:** In April 2015, the G20 finance ministers requested the Financial Stability Board (FSB) to examine the issue of financial stability in the face of climate change. Critical issues include an understanding of the scale of the physical and transitional issues, the adequacy of market information as well as the preparedness of financial institutions to understand the long-term risks attached to climate change. The FSB is gathering public and private participants to examine the challenge ahead of the COP 21 climate change conference.

## 3.8 LESSONS FROM PRACTICE

*The Inquiry's findings point to an emerging practice that is reshaping the financial system to take greater account of sustainable development.* The Inquiry's exploration has identified five approaches for improving the alignment of the financial system with sustainable development outcomes. Notwithstanding the limits owing to data inadequacies, the Inquiry's exploration of practice, combined with broader engagement and desk-based research, allows for conclusions to be drawn as to the potential for each of the five approaches as summarized below.

> "The People's Bank of China is spearheading the drafting of the 13th Five Year Plan for the reform and development of China's financial sector; green finance will be a key element of this plan."
>
> Pan Gongsheng, Deputy Governor, People's Bank of China[224]

FIG 6 COMPARATIVE POTENTIAL FOR THE FIVE APPROACHES

| APPROACH | CURRENT PRACTICE | POTENTIAL IMPACT | |
|---|---|---|---|
| ENHANCING MARKET PRACTICE | Widely adopted as relatively straightforward, and relevant to all countries' financial systems. | Aims to increase financial returns through better assessment of risk:return opportunities. | Likely to have a slow, modest impact unless undertaken with additional measures. |
| HARNESSING PUBLIC BALANCE SHEETS | Widely adopted, but limited by cost. | Aims to increase financial returns in return for public goods. | Can be very effective where deployed, but is likely to be limited in impact because of scarcity of public finance. |
| DIRECTING FINANCE THROUGH POLICY | A long history of use, now being adapted for sustainability goals. | Varied effects on financial returns in requiring the delivery of public goods. | Can be successful but with a greater potential for unintended consequences. |
| ENCOURAGING CULTURAL TRANSFORMATION | Not widely practiced, but potential for wide application and positive signs emerging post crisis. | Can have varied effects on financial returns. | Can be effective, especially when linked to policy direction and incentives and aligned to broader societal expectations. |
| UPGRADING GOVERNANCE ARCHITECTURE | Least practiced. | Is an essential enabler of the measures above. | |

*Emerging practices differ widely in their potential impacts and ease of implementation.* Comparatively simple measures to improve market practice such as enhanced disclosure may be useful starting points, but alone will not deliver the quantum changes required. Measures such as priority lending and strengthened environmental liability, on the other hand, may over time drive greater change, but need careful design and market preparation to avoid unintended consequences.

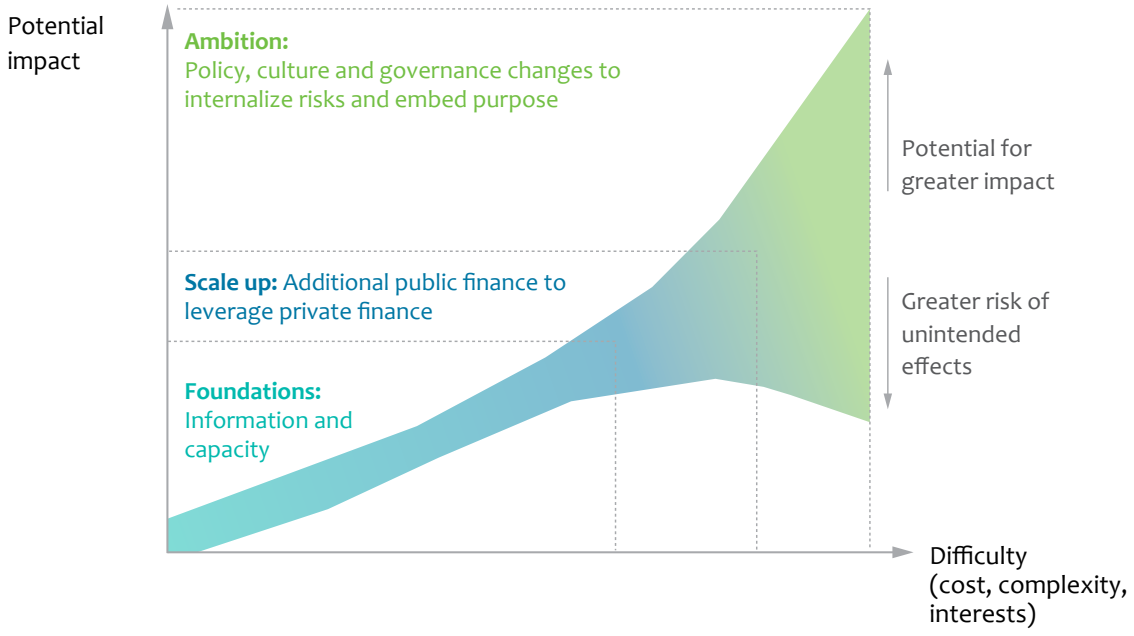
Ultimately, what is needed is a package of measures that over time trigger broader changes to the behavioural, cultural and market dynamics of the financial system.

The approaches to date have mainly, but not exclusively, been focused on energy and carbon. Further work will also be needed to explore and develop similar approaches to other areas of natural resource stewardship and biodiversity conservation.

*Realizing the potential indicated by the quiet revolution requires a systematic approach.* Developing a sustainable financial system will only be achieved by going beyond both business-as-usual approaches to financial market development and the adoption of ad hoc innovations. However, measures must be designed with care. Adjustments should be made to address bias against green assets, but should avoid introducing new biases, sources of uncontrolled risks and possibly unsustainable dynamics. Incentivizing investment without also addressing bottlenecks in the supply of projects can lead to mispricing and asset bubbles. Consideration of the sustainability of public support is crucial to avoid excessive capital allocations and subsequent capital losses if public support is reduced.

A systematic approach is needed that ensures that the right combination of measures is selected and effectively implemented. To this end, the Inquiry has developed a Framework for Action intended to help policy-makers and regulations, in partnership with other actors, to design and oversee the implementation of appropriate measures to advance a sustainable financial system. This is the focus of the next section of this report.

FIG 7 AMBITION, POTENTIAL AND DIFFICULTY



# A FRAMEWORK FOR ACTION

Chapter ● 4

# A FRAMEWORK FOR ACTION

## 4.1 SYSTEMIC APPROACH

*The Framework for Action is intended to support both a more systematic and a systemic approach.* It provides suggested pathways to assess, plan and execute financial system innovation in a more systematic manner to deliver more effective outcomes. Such innovations will be particularly effective if the appropriate collaborative platforms are in place, along with the necessary feedback loops to enable a quick determination of success or failure and the need for any adjustments.

Beyond this, there is the potential for systemic impacts – where narrow interventions can trigger broader changes across the financial system. Such effects can be catalysed in diverse ways. Development of policies and vehicles to address one area of environmental risk or concern may lead to practice which is adopted more broadly. Focused attention on the assessment and pricing of environmental risks and opportunities can lead to the development of new competencies, business models and changing expectations across the value chain from asset to project owners. Shifts in recognition of environmental issues and sentiments towards classes of assets, can take place abruptly and spread across financial markets through herding behaviour. Public awareness, policy and politics can also play a role in triggering systemic effects, where, for example, exemplary leadership or visible natural disasters create pressure for broader, mandated change.

> "When we examine today's experience, we can see the individual stars – what we need is to understand the workings of the heavens."
>
> Zhang Chenghui, Director General, Financial Research Institute, Development Research Centre, China State Council[225]

*The Inquiry's Framework for Action offers a structured set of policy options to better align financial systems with sustainable development. This section sets out* a **Framework for Action** comprised of:

1. *A toolbox of instruments,* drawn from observed practices, that can be deployed both at the national and international level.
2. *Suggestions for policy packages focused* on financial sectors.
3. *Processes to strengthen the enabling architecture of the financial system.*

## 4.2 THE INQUIRY'S PRACTICE-BASED TOOLBOX

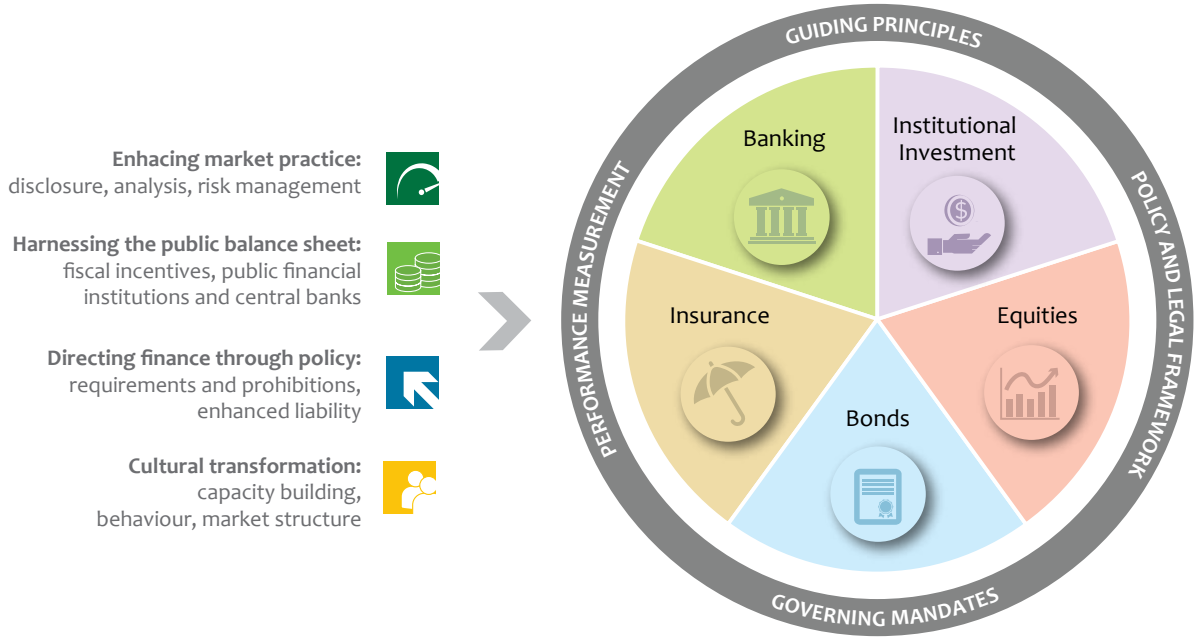
*The Sustainable Finance Toolbox builds on four core levers* (actions to upgrade governance architecture are covered in a separate section, as they provide support across the toolbox).

## Fig 8 The Sustainable Financial Policy Toolbox

| | Theme | Tool |
|---|---|---|
|  Enhancing market practice | **Financial responsibility** | Fiduciary duty |
| | | Fiduciary capability |
| | | Incentives |
| | **Prudential regulation** | Risk management |
| | | Stress tests |
| | | Capital requirements |
| | **Disclosure and reporting by financial institutions** | Policy |
| | | Performance |
| | | Accounting |
| | **Disclosure and reporting by non-financial corporations** | Standards and requirements |
| | | Accounting frameworks |
| | **Financial market criteria** | Equity analysis |
| | | Credit ratings |
| | | Green assets |
| | | Indexes |
|  Harnessing the public balance sheet | **Fiscal incentives** | Targeted fiscal incentives |
| | | Review fiscal incentives |
| | **Public financial institutions** | Sustainability mandates |
| | | Establishing new green institutions |
| | | Blended finance instructments |
| | **Central Banks** | Refinancing operations |
| | | Asset purchase programmes |
| | **Public procurement** | Procurement criteria |
|  Reforming legal and market structures | **Legal Liability** | Lender and other liabilities |
| | **Capital requirements** | Adjust capital requirements |
| | **Directed investment and lending** | Priority sector lending |
| | | Prohibitions |
| | **Directed service provision** | Directed provision |
| | | Mandatory purchase requirements |
|  Encouraging cultural transformation in financial decision-making | **Financial capacity building** | Consumer education |
| | | Professional education |
| | | Regulator capacity building |
| | **Financial behaviour** | Remuneration regulation |
| | | Codes of conduct |
| | | Non-financial guidance |
| | **Market Structure** | Value-based financial institutions |
| | | Market diversity |
| | | Right sizing financial institutions |

| Illustrative Applications |
| --- |
| Clarify that duties to clients (including stewardship) include sustainability factors. |
| Include requirements for knowledge and training on sustainability to undertake fiduciary responsibility. |
| Encourage asset owners to ensure better alignment of incentives along the investment chain. |
| Integrate sustainability into guidance and requirements on risk management and controls. |
| Develop scenarios to test impact of environmental shocks on assets and business models. |
| Calibrate capital requirements to incorporate environmental factors and support long-term finance. |
| Introduce requirements to disclose policy on sustainability. |
| Introduce requirements for annual reporting on sustainability performance and risk outlook. |
| Enhance treatment of long-term finance and sustainability factors. |
| Introduce sustainability reporting requirements, including through stock exchanges. |
| Enhance treatment of long-term finance and sustainability factors. |
| Encourage greater transparency in equity analysis of incorporation of sustainability factors. |
| Encourage the integration of sustainability risk factors into credit analysis. |
| Adjust standards and rules to facilitate capital raising (e.g. green bonds, green sukuks, green IPOs, yieldcos). |
| Ensure that benchmarks and indices reflect critical sustainability factors. |
| Target fiscal support in most efficient way to mobilize private capital for green assets. |
| Review the alignment of existing fiscal incentives for savings, investment, lending and insurance with sustainability. |
| Strengthen sustainability as part of the mission and operation of development finance institutions and sovereign wealth funds. |
| Launch new green investment banks and funds. |
| Develop and use financial instruments designed to share risks and overcome barriers to private investment (risk underwriting and results based financing). |
| Extend refinancing operations to include green assets. |
| Incorporate sustainability factors into asset purchase programmes. |
| Introduce sustainable development performance into procurement of financial services by the public sector. |
| Establish proportionate liability regimes for lenders, fiduciaries and insurers to drive adequate due diligence for environmental damage. |
| Enable access to capital for critical sectors (e.g. for SMEs, green assets). |
| Include environmental and social factors into priority lending programmes. |
| Restrict financial transactions due to excessive societal costs e.g. lending to illegal deforestation (Brazil) and pollution intensive industrial plants (China). |
| Require that financial institutions provide access to particular financial services such as bank accounts and insurance as part of licence agreements. |
| Explore need for mandatory purchase of key financial services (such as insurance) that are essential for system resilience in the face of environmental stress. |
| Extend financial literacy programmes to include sustainability. |
| Build the required skills and capabilities among financial professionals. |
| Improve the sustainability capabilities of financial regulators and policymakers. |
| Include sustainability in remuneration regulations – so that individual compensation relates to performance in terms of long-term sustainability. |
| Incorporate environment and sustainability in policies to promote integrity in financial markets and the upholding of core values. |
| Encourage financial institutions to respect global standards of responsible conduct (such as Guiding Principles on Business and Human Rights and the OECD Guidelines for Multinational Enterprises[226]). |
| Ensure a level-playing field for values-based financial institutions (including cooperatives, impact investment etc.) |
| Promote diversity of financial institutions in terms of size, geographical focus, ownership and business model. |
| Take action to "right size" financial institutions to deliver sustainability outcomes (e.g. consolidation and unbundling). |

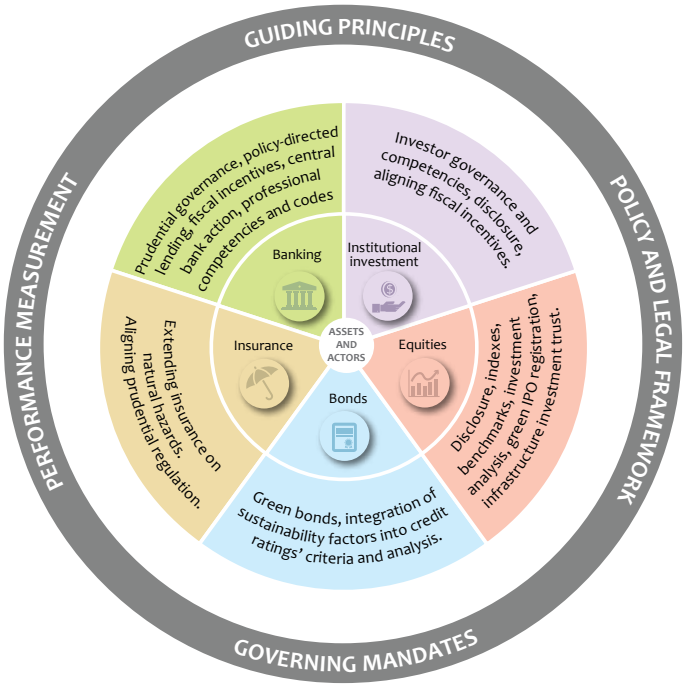
FIG 9 OVERVIEW OF THE FRAMEWORK FOR ACTION




## 4.3 APPLYING THE TOOLBOX TO CRITICAL FINANCIAL SECTORS AND ASSETS

Each country will develop their own package of measures in relation to their own context, priorities and existing frameworks. Here the Inquiry provides a series of suggested *policy packages combining different tools that are focused on banking, debt markets, equities, institutional investment and insurance, supported by a final set of recommendations focused on building the supporting governance.*

FIG 10 POLICY PACKAGES AND SUPPORTING GOVERNANCE



## BANKING

With an aggregate balance sheet of US$135 trillion, banks hold over 45% of global financial assets and sit at the heart of the financial system, particularly in developing countries.[227] Banks have a critical role in allocating credit to households and enterprises, and originating loans that can be bundled into products for long-term holders of assets. Sustainability factors not only influence the credit, market, operational and reputational drivers of value and risk, but also shape the underlying business models that banks deploy. The Inquiry's findings highlight the potential for a positive dynamic between collective initiatives (such as the Equator Principles) and policy measures that can overcome market barriers to voluntary adoption and implementation. Looking across the sector, there are three priorities for further policy action.

| Priority | Proposal package: key tools |
|---|---|
| • Extend risk-based governance | Risk management guidance<br>Internal stress tests<br>Regulatory stress tests |
| • Strengthen access to sustainable finance | Priority lending requirements<br>Low cost loans and guarantees<br>Variations in capital provision requirements<br>Central bank refinancing operations.<br>New financial service models |
| • Improving banking culture and structure | Financial capacity building<br>Market structure and diversity<br>New green financial institution<br>Value based organization |

**Extending risk-based governance** is a particular focus in developing countries, which face immediate environmental challenges, often in situations with weak enforcement of environmental regulations. The Inquiry has identified leadership in countries such as Bangladesh, Brazil, China, Indonesia and Peru. Regulatory requirements to incorporate environmental and social factors into risk management and due diligence (as in Brazil and Peru), may be needed where market dynamics limit the scope for voluntary market action. Learning and accountability can then be encouraged through an assessment of performance, with publication of aggregate results: the China Banking Regulatory Commission, for example, produces an annual report on progress.[228] A second stage would be to develop sustainability stress tests to explore the impact of future environmental and

social scenarios of the portfolios and business models of banks. Scenarios could cover issues such as air pollution, climate change, inequality, natural hazards, new technology, soil erosion and water stress. To date, a small but growing number of banks are experimenting in this area, and collaborative work at this stage in the innovation cycle could help to build shared methodologies and approaches.

Beyond risk lies the imperative of **improving access to sustainable lending**. A key priority is to increase the diversity and depth of financial markets to increase the supply of green finance, particularly low-cost debt.[229] A range of instruments can be deployed, including priority lending requirements, below-market rate finance via interest-rate subsidies and central bank refinancing operations. Established priority sector lending programmes, such as in India, are also being upgraded to incorporate sustainability priorities Rapid technological innovation is also offering lower cost ways of enabling access to lending, notably through mobile banking and peer-to-peer lending. If appropriately regulated, these tools hold considerable potential across all countries.[230] Finally, the risk:reward mismatch for green finance could be addressed through exploring variations in capital requirements for certain classes of lending.

A third avenue for policy reform is the opportunity to better align banking culture and structure. This cluster takes policy making beyond adjustments to risks and returns to look at underlying skills, values and market composition. For underdeveloped banking communities, there is an undoubted need to invest in basic skills, whereas in developed economies the need is to ensure that professional training and related certification includes critical skills in understanding sustainable finance. Policymakers can also encourage access to sustainable finance (particularly for SMEs) through a more diverse banking structure, for example, through the introduction of dedicated green banks as well as banks with a clear mission to achieve social and environmental impact.[231]

## DEBT CAPITAL MARKETS

The bond market focuses on longer-term debt instruments issued by governments and corporations. It also allows lenders to convert illiquid assets into tradable asset-backed securities. Bonds are the largest single asset class in the financial system, currently valued at about US$100 trillion.[232] As capital requirements for bank debt tighten, bond markets are an increasingly important means of raising long-term debt, particularly for assets with relatively predictable risks and returns. In this case, there are two interlinked public policy priorities.

| PRIORITY | PROPOSAL PACKAGE: KEY TOOLS |
|---|---|
| • GREEN BONDS | Product standards – green bond standards and verification |
| | Targeted fiscal incentives |
| | Credit enhancement (aggregation,securitization and covered bonds) |
| | Greening asset purchase programmes, strategic investment from public entities such as sovereign wealth funds |
| | Variations in capital requirements |
| • GREENING BOND MARKETS | Credit ratings |
| | Compacts and roadmaps |

The growth rate of **green bonds** has been rapid, with US$36 billion of labelled green bonds issued in 2014, up from US$11 billion in 2013. However the overall market for green bonds– with US$66 billion outstanding by June 2015 – still has considerable potential to grow.[233] The growth of the market can be in part explained by the comparable risk-adjusted financial returns of green bonds with non-green bonds, and the broad eligible issuer base. Any bond issuing entity can issue a labelled green bond, because the requirements of using the label pertain to the use of proceeds being earmarked to qualifying green projects, not to whether the issuing entity is green. The label and earmarking makes it easier for investors to

identify green investments. Investor demand for labelled green bonds is strong, evidenced by higher rates of oversubscription than non-green bonds. However, barriers to scaling up the market include the development of credible and ultimately verifiable standards. Green bond market development committees, involving market actors and public sector players such as in Brazil, California, Canada, China, India, Mexico and Turkey are developing country- and state-specific definitions and standards. Global cooperation between the committees is critical for international comparability and consistency. Ultimately, green bonds may need specific securities regulation to protect consumers, but initial, experimentation and development of standards is critical. National and international market development strategies could draw on a set of 10 actions identified by the Climate Bonds Initiative and the World Bank working with the Inquiry.[234] China, for example, is due to produce the world's first, state-developed green bonds guidance. This could then provide the basis for providing fiscal advantages in the form of tax relief, as well as possibly some penalties for misuse use of proceeds.

### Box 18 10-point Potential Agenda for Action on Green Bonds[235]

1. Market Integrity: support the establishment of common green definitions, standards, verification, certification – as well as enforcement through securities regulation to protect consumers.
2. Pipeline Development: enabling issuers and investors to plan ahead and build expertise.
3. Strategic Issuance: from public agencies such as development banks and municipalities.
4. Product Development: through aggregation of small projects, use of standardized contracts, securitization and supporting warehousing facilities.
5. Improving risk:return profile: through credit enhancement such as partial guarantees, subordinated debt and insurance.
6. Improving returns: through tax credits and incentives (such as Clean Renewable Energy Bonds in the US); tax incentives can also strengthen market integrity through linkage to verified performance.
7. Facilitating green bond investment from public funds: through mandates for sovereign wealth funds and pension funds.
8. Central bank bond purchases: include green bonds in reserve management and asset purchase policies.
9. Regulatory adjustment: to give a preferential weighting for green bonds in capital requirements.
10. International cooperation: to avoid market fragmentation and underpinning market liquidity through mutual recognition of standards.

Beyond such targeted measures is a broader need and potential to **encourage a greening of bond markets**, specifically to integrate environmental, social and governance factors into routine credit ratings. A first step would be greater transparency by credit rating agencies as to how such factors come into their analysis, which would allow for a more robust debate and method development process. Competitive pressures may drive some leadership, such as S&P's early integration of climate into sovereign ratings and Datong's move to drive key environmental factors into its corporate and municipal ratings method.[236] However, there may be scope for a collaborative approach. With leading credit ratings and investors, the Inquiry has made initial moves to explore the potential for collective action to develop a 'ratings roadmap' on selected sustainability topics.[237]

## EQUITY CAPITAL MARKETS

The world's equity markets have historically been the primary source of risk capital, with 45,000 companies with a total listed market capitalization of about US$70 trillion.[238] In addition is the US$20 trillion in property portfolios, the privately held portion of the US$35 trillion in infrastructure assets and the US$4 trillion in private equity and venture capital.[239]

Stock exchanges have transformed almost beyond recognition over the last quarter century. Trading volumes have grown and algorithmic trading has become a major element of equity trading in a number of jurisdictions; commercialization of exchanges has diversified service offerings beyond basic market platforms. However, trading in the secondary market for existing securities is not a direct source of capital for new investment. Large companies tend to be self-financing and use cash flow to finance investment.[240] New equity issuance has been negative over the last decade in many mature markets such as the US and the UK, as companies have returned cash to shareholders through buy-backs.[241] Nevertheless, equity markets still provide a crucial rule in the stewardship and governance of capital allocation within listed corporations. Four key areas are:

| Priority | Proposal package: key tools |
|---|---|
| • Market transparency | Standards and requirements for sustainability disclosure |
| • Deepening use of sustainability data | Transparency in equity analysis and equity indices |
| • Upgrading capital raising function for green assets and green start-ups | Enabling regulation – green IPOs<br>Enabling regulation – yieldcos |
| • Mobilizing private capital into infrastructure | Product standards for green infrastructure investment vehicles<br>Low cost loans and guarantees<br>Enabling regulation – infrastructure investment |

**Sustainability disclosure** has a long history, and is one of the most widespread practices, encouraged by legislation, stock exchange listing requirements and voluntary initiatives (as outlined in Box 6). A patchwork of overlapping requirements and gaps in the coverage of issues, such as the impact of natural disasters and the potential for asset stranding in high carbon sectors, remain clear weaknesses. There is potential for a more harmonized and broadly adopted approach to measuring key sustainable development impacts. Requirements for reporting, such as those of the BOVESPA, Singapore and the Johannesburg Stock Exchanges, increasingly include criteria on the quality of reporting. The Sustainable Stock Exchange Initiative recently issued a Model Guidance as a resource for exchanges to help issuers meet investors' need for sustainability information.[242] Exchanges remain concerned, however, about the potential competitiveness implications of tighter reporting requirements. This provides an important entry point for the International Organization of Securities Commissions (IOSCO) to avoid regulatory arbitrage by working with its member organizations to develop common disclosure frameworks and encourage adoption. About a third of IOSCO's 32 participating regulators have introduced a sustainability reporting initiative. IOSCO could also work with exchanges and regulators to

develop a new generation of market quality metrics. These metrics would include a focus on capital allocation and investment functions as well as market transparency.

If it is material to disclose, it can also be increasingly material to incorporate sustainability factors into other parts of equity market operations, notably investment analysis and benchmarking to deepen the use of sustainability data. Market demand is already encouraging sell-side investment research to incorporate environmental and social factors, and is prompting a rise in the range of tailored sustainability benchmarks and indices. But these are far from the norm, and policymakers can encourage greater transparency in both equity analysis and equity indices. Today's landscape of market capitalization weighted indices can also reflect a bias against green, low carbon assets, which could lead to a misallocation of resources.[243]

**The capital-raising function of equity markets** can also be upgraded. This could include reducing the registration costs or speeding up administrative treatment for certain classes of new capital raising, as the US SEC is considering in relation to small and medium-sized businesses, and China is considering in relation to green IPOs. Another key area of opportunity are innovative, infrastructure investment vehicles such as green infrastructure investment trusts, which offer a way to refinance infrastructure assets through bond and equity markets. Known in the US as yieldcos, these offer investors liquid ways of holding illiquid assets such as renewable energy power plants. According to the OECD, clean energy yieldcos have raised more than US$6 billion in the past two years alone.[244] To grow the market, financial regulations may need to be reformed to remove unintentional constraints against institutional investors such as pension funds and insurers holding such assets.

Beyond the listed markets, a number of steps need to be taken to **mobilize more private capital into infrastructure**. Critical measures in the real economy include developing infrastructure principles for sustainable development, expanding the pipeline of bankable sustainable infrastructure projects, improving the transparency of public procurement frameworks, and incorporating sustainability factors. Within the financial system, a review of financial regulations is needed to remove unintentional constraints on investments in sustainable infrastructure, notably by institutional investors such as pension funds and insurers, and creation of a transmission mechanism to refinance infrastructure assets through bond and equity markets. "Blended finance" approaches using public funding to provide guarantees, low cost loans and subordinated debt and equity, play a key role in infrastructure. Their effectiveness needs to be reviewed to ensure that good value is obtained for public spending, and to develop best practice and expertise.[245]

## INSTITUTIONAL INVESTORS

With nearly US$100 trillion under management, institutional investors, including investment funds, pension funds, insurance companies, endowments and sovereign wealth funds are, after banks, the largest asset holders across all asset classes.[246] In the wake of the financial crisis, institutional investors have become the focus of policy attention as a key intermediary of long-term capital, a critical actor in the stewardship of assets and a driver of enhanced environmental and social performance. Investors themselves are taking increasing action to integrate sustainability factors into their own investment strategies – and also into their dialogue with policymakers to ensure that market signals reward sustainable value creation.[247] Indeed, the Inquiry's work with leading institutional investors has found that policy reform is critical to align the institutional investment landscape with sustainable development; voluntary action will be insufficient.[248] To date, most policy interventions have focused principally on the disclosure of investment policies and formal statements of legal duties. Policy can support existing market initiatives – and fill the gap where markets will not deliver solutions, focusing on two main areas of opportunity:

| PRIORITY | PROPOSAL PACKAGE: KEY TOOLS |
|---|---|
| • ALIGNING THE DESIGN OF PENSION AND OTHER INVESTMENT SYSTEMS WITH SUSTAINABILITY | Clarifying fiduciary duty<br>Fiduciary capacity<br>Professional Education<br>Principles based performance requirements – guidance on OECD guidelines<br>Sustainability disclosure requirements |
| • REVIEWING MARKET AND PUBLIC INCENTIVES | Introduce long-term sustainability mandates for public financial institutions<br>Encourage asset owners to ensure better alignment of incentives down the chain<br>Review fiscal incentives |

A key first step is to **align the design of pension and other investment systems with sustainability.** This means striking a new balance between the adequacy and reliability of outcomes for savers, affordability for public and private sector sponsors, and consistency with sustainable development. There is much that policymakers can do at the national level to support the development of good practice, notably clarifying in law and guidance that fiduciaries must take account of sustainability issues in their investment processes, and pay attention to long-term drivers of investment value. Internationally, a statement on fiduciary duty and sustainable development could help codify good practice by making clear the duties that fiduciaries owe to their beneficiaries include taking account of sustainability factors in their investment, ownership, policy engagement activities. As part of this, practical guidance is needed to help investors meet the expectations of "soft law" sustainability frameworks such as the OECD Guidelines for Multinational Enterprises. Prudential rules can require that investment institutions have the skills and capabilities to reflect sustainability in their investment strategies. Requirements to demonstrate that governing body members have appropriate knowledge and training can be introduced, including into the definition of a "fit and proper" person. To support this, regulators can request that professional bodies include sustainability in their core curricular and continuing professional education programmes. Savers and intended beneficiaries, facing both growing choice and risks, need greater literacy in order to make the right decisions for themselves. Regulators can also consider whether some pension funds are too small and weakly governed to serve their beneficiaries effectively (including in the incorporation of sustainability factors), and whether consolidation is warranted.

For all funds, reporting on the stewardship of assets as well as sustainability performance is critical to drive accountability and internal capacity building. Regulatory monitoring of stewardship codes on behalf of all investors (pension, insurance, institutional, retail) is likely

to strengthen implementation. A growing number of countries have introduced sustainability disclosure requirements for funds – most recently in France.

Policymakers can help stimulate long-term demand for investment products that incorporate sustainability through a **resetting of market and public incentive structures**. Asset owners stand at the top of the investment process. They can be enabled through better governance and encouraged through market codes, to align incentives down the chain, notably for investment consultants, asset managers and investment analysts. These include public pension funds, sovereign wealth funds and other investment vehicles (such as the new Asian Infrastructure Investment Fund). These may choose to advance unilaterally, or be part of a broader collaborative approach that goes beyond previous joint efforts such as the Santiago Principles. In addition, tax is a powerful driver of investment behaviour, with wide use of fiscal incentives to encourage savings and investment. However, these are rarely aligned with long-term performance or sustainability outcomes. Policymakers could review the effective use of fiscal incentives to drive long-term finance for the real economy and cost-effective encouragement of sustainable investments.

> "Investing for the long-term requires strategies that create sustainable value, mitigate multifaceted risks, and strengthen both local and global economies. The common denominator is having a stable and forward-thinking policy foundation."
>
> Anne Stausboll*, CEO, CalPERS[252]

## INSURANCE

The insurance business model is built on the principle of mutualization of risk – making it a particularly effective tool for the management of collective sustainable development challenges.[249] As underwriters, insurers help improve resilience by promoting good physical risk management, before carrying and transferring financial risk from local to global levels, including the securitization of environmental risks to financial markets.[250] As investors, insurers aim to match liabilities with stable, long-term investment returns. Enhancing insurance markets, products, and coverage can have transformative effects on economic and livelihood resilience, and in enabling environmental sustainability through green insurance solutions, create multiple positive spillovers across the real and financial economies. Importantly, these spill-overs mean that insurance is one sector where policy direction – including both mandatory provision and purchase – is commonplace and generally uncontroversial. The Inquiry's work with the insurance sector has involved a global consultation on priorities for policy reform, a series of consultations at the country level as well as two global events.[251] From this, it is clear that regulators and policymakers are already innovating in multiple ways to harness insurance for sustainable development, with three priorities emerging for further action:

> "Tax reform that promotes long-term investment will benefit both the companies who rely on capital markets and the hundreds of millions of people saving for retirement."
>
> Larry Fink, CEO, BlackRock[253]

> "Climate change poses a serious financial threat to the insurance industry, which could impact the affordability of insurance products."
>
> Dave Jones, Insurance Commissioner, State of California, US

| Priority | Proposal package: key tools |
|---|---|
| • Closing the protection gap | Fiscal support<br>Policy directed provision<br>Mandatory purchase<br>Enabling regulations to support new financial products<br>New financial service models<br>Consumer financial literacy |
| • Calibrate prudential governance to better reflect long-term economic and environmental realities. | Remove regulatory constraints<br>Risk guidelines<br>Internal stress tests<br>Require regulatory stress tests |
| • Bridging the sustainability frameworks for underwriting and investments | Incorporate environmental and sustainability risks into implementation of Insurance Core Principles |

**Closing the protection gap** is the top priority; one element in the imperative to secure universal access to financial services. In the poorest 100 countries, less than 3% of the population is served by effective insurance protection against natural hazards.[254] Insurance confers benefits both before and after disaster strikes. Beforehand, the underwriters of risk seek to limit their exposure by demanding better-planned and higher-quality infrastructure from property developers and city planners. Afterwards, insurance helps entire economies to recover more rapidly. By analysing 2,476 natural catastrophes across more than 200 countries between 1960 and 2011, researchers at the Bank for International Settlements found that well-insured catastrophes have only a small medium-term effect on growth. Without insurance, by contrast, a "typical" disaster results in a permanent hit to growth of almost 2%.[255] Even in developed countries, the extent of uninsurable assets is projected to increase rapidly as climate change intensifies. There is certainly no single approach to closing this gap: with tailored mixes of fiscal support, policy directed provision and purchase, along with regulatory concessions and market development having proven effective in a number of countries ranging from Brazil, India and the Philippines (which has one of the highest micro-insurance coverage ratios in the world), to Switzerland, where natural catastrophe insurance is mandatory through fire insurance. Mandatory environmental liability insurance for pollution-intensive industries has also proved to be of interest for some developing countries, and is currently under discussion for high-polluting industries in China.[256] On balance, green insurance solutions that promote environmental sustainability, such as insurance for renewable energy, energy efficiency, geothermal exploration and forestry, are a largely untapped opportunity.

Alongside this is the need to **calibrate prudential governance** to better reflect long-term economic and environmental realities. Following the policy developments in the wake of the recent financial crisis, a regulatory review may be relevant to assess the implications for risk-taking and long-term investment, particularly on cross-border investment into developing economy infrastructure.[257] Capital charges could be inadvertently increasing short-termism, volatility and pro-cyclicality, while dampening investment in the long-term assets required for sustainable development.[258] A tradable asset class is needed to enable insurers and other investors to easily access sustainable infrastructure investments.[259] On the environmental front, the re/insurance sector has the longest history of incorporating factors such as extreme weather events into their annual solvency assessments, testing their resilience against the worst combination of 1-in-200-year events. Importantly, progress has been achieved not through a single measure, but a series of interlinked regulatory metrics, financial regulation and reporting, credit ratings, accounting standards and investor analysis and accountability. This experience provides a platform for explicitly integrating long-term risk factors such as cli-

mate change into prudential reviews: US supervisors started this process through annual surveys of the preparedness of insurance companies to climate change, both in terms of direct physical impacts and wider policy changes.[260]

Finally, there is considerable potential for **bridging the sustainability frameworks for underwriting and investment.** To date, approaches to managing sustainability factors have generally been managed in the silos of prudential and market conduct rules. Considerable benefits could accrue from looking at sustainability challenges as a whole, and transferring lessons. Considerable progress has been made to broaden access to vital insurance products, including through improvements in regulatory and supervisory frameworks. The next step is to ensure that critical environmental and sustainability risks are effectively incorporated into the implementation of the international Insurance Core Principles. Key to the success would be a leadership group of supervisors at the national level who have started to address environmental risks, such as climate change, working closely with the IAIS and the Access to Insurance Initiative (A2ii).[261]

> "In the Philippines, we have shown that we can make insurance more affordable and accessible to low-income people. But access is definitely not enough. Climate change and natural disasters are major threats to sustainable development. Insurers, regulators, governments, business and civil society must work together to reduce these risks and scale up solutions."
>
> Emmanuel Dooc, Insurance Commissioner of the Philippines[262]

## 4.4 DEVELOPING THE SUPPORTING GOVERNANCE ARCHITECTURE

The final part of the proposed Framework for Action concerns the potential for development of the supporting governance architecture across the financial system to support the specific actions outlined above.

| | Develop supporting governance architecture<br>Establishing a governance architecture for the financial system sensitized to sustainable development |
|---|---|
| **Approach** | **Explanation** |
| • Principles | » Adopt principles for a sustainable financial system to guide policymaking. |
| • Policy and Legal Frameworks | » Consider impacts on sustainability when developing and reviewing financial regulations.<br>» Incorporate sustainability into financial sector development plans.<br>» Ensure that opportunities for financial system reform are included into sustainability policies.<br>» Introduce long-term strategies and roadmaps, supported by coordination mechanisms.<br>» Strengthen the legal and judicial system to aid enforcement. |
| • Regulatory Mandates | » Explore the impact of sustainability factors for existing mandates of central banks and financial regulators and adjust where necessary. |
| • Performance Measurement | » Develop a performance framework to assess and guide progress in developing sustainable financial systems. |

## GUIDING PRINCIPLES

*Principles for a sustainable financial system could be established and used to frame the development of governing mandates, standards, and practice.* Globally, the financial system is guided through "soft law" principles and standards, which are then implemented at the country level and reviewed by a number of international institutions. The FSB, for example, has built a compendium of 14 standards, including overarching principles such as the Basel Committee's Core Principles for Effective Banking Supervision, the International Association of Insurance Supervisors (IAIS)'s Insurance Core Principles, and the OECD's Principles of Corporate Governance references.[263] At present, however, there is no common reference point on how to develop financial policies and regulations that are aligned with sustainable development. The development of a set of guiding principles for policy formulation could help to pool practical knowledge and broaden the application of emerging approaches. Based on our work, a possible structure for such principles is included below.

## POLICY AND LEGAL FRAMEWORKS

*Such guiding principles could be supported by a broader legal and policy architecture to ensure coherence between financial governance, wider public goals and the rule of law.* Governments could advance this by establishing a legal and policy architecture that would promote a coherent approach to sustainable finance. This might include connecting financial market development to wider sustainable development policies, such as the provisions of the UK's Climate Change Act to invite all public agencies, including financial regulators, to prepare climate adaptation reports; this created the statutory basis for the Bank of England to conduct its prudential review of insurance. China's decision to bring green finance into the financial market development plans set out under the 13th Five Year Plan would be another case in point. Finally, legal developments might be appropriate to support the transition to sustainable finance – such as measures to advance lender and investor liability.

FIG 11 POSSIBLE PRINCIPLES FOR A SUSTAINABLE FINANCIAL SYSTEM

| | | | |
|---|---|---|---|
| OVERARCHING PRINCIPLE | 1 | **The purpose of the financial system** | … is to serve the needs of society by facilitating payments, aggregating, protecting and allocating savings to the most productive uses and managing risk in ways which support an inclusive and sustainable real economy. |
| CORE MEASURES LINKED TO PURPOSE | 2 | **Pricing of risk and reward** | … internalises the value of human, natural and social capital to deliver sustainable development. |
| | 3 | **Access to the value of finance** | … is available to all. |
| | 4 | **System stability** | … support sustainable development across time. |
| WHO PAYS AND IS REWARDED | 5 | **Reward earned by the sector** | … is commensurate with the value it creates. |
| | 6 | **Public finance** | … only supports public interest outcomes that should not be delivered through private means. |
| MARKET INTEGRITY | 7 | **Market composition** | … encourages healthy diversity and innovation. |
| | 8 | **Impacted stakeholders** | … are empowered through rights, information and capacities. |
| | 9 | **Culture, values and norms** | … are aligned to purpose, supported by appropriate incentives. |
| GOVERNANCE | 10 | **System governance** | … is aligned to purpose, with appropriate transparency of decision-making, performance and redress. |

## REGULATORY MANDATES

*The role of central banks and financial regulators in responding to sustainability challenges could be enhanced by clarifying and strengthening their related mandates.* To date, these advances have been achieved without extensions to existing mandates, most of which are focused on prudential regulation, monetary policy and associated goals, such as growth and employment. Such mandates can be interpreted narrowly, or more broadly. It could be useful to clarify in what manner mandates should consider sustainability factors, whether through redefinition or clarification, particularly in the light of any development in principles, policy and legal architecture.

### Box 19 Central Banks: Key Actors in Advancing a Sustainable Financial System

Central banks are key actors in the development of financial and capital markets, and more broadly sustainable economic development, through monetary policy and recently enhanced financial stability roles, as well as other roles.

The Inquiry's findings point to central banks in developing and emerging economies being more active than their developed country counterparts in explicitly considering national policy priorities, including financial inclusion and environmental issues as well as national economic and industrial strategies. Some commentators see these extended roles as a transitional phase that ends as other public institutions become stronger. Others point to a history of central banks targeting development objectives, and see a need to ensure alignment of central bank decision-making with a broader sustainability agenda.

Noting this spectrum of views, central banks have a number of potential roles in encouraging sustainable finance.

- Monetary policy has an impact on:
  - Income and wealth distribution within and across generations.
  - Discount rates, the value being attached to future revenues and costs, and thus financing time horizons.
- Central banks as prudential authorities and regulators can:
  - Impose sustainability-related risk management and reporting requirements.
  - Incorporate impacts of natural disasters and climate changeconsideration into financial institution stress tests.
  - Require sustainability related director and trustee capabilities and skill requirements of certified financial professionals.
  - Adjust capital provisioning to account for under-priced risks and in some instances policy objectives.
  - Initiate prudential reviews of the impact of sustainability factors on financial stability.
- In the context of monetary policy operations, central banks can:
  - Provide refinancing at below market rates to encourage targeted lending, or to complement existing priority lending targets, such as the Bank of England's 'Funding for Lending' programme.
  - Stimulate markets for specific assets – such as green bonds – through asset purchases.
  - Invest in bonds of public bodies and equity (e.g. Silk Road Fund) of public bodies that pursue sustainability objectives.

Central banks addressing a sustainability agenda through one or more of these routes will need to consider their capabilities, governance and quality of coordination with other public bodies.

## PERFORMANCE METRICS AND METHODOLOGY

*A performance framework is needed to assess and guide progress in developing sustainable financial systems.* Existing frameworks for assessing financial market development, such as those used in the World Bank's Financial Development Report, focus on traditional measures of depth, efficiency and stability as well as access.[264] Meanwhile, measures used to describe progress on sustainable finance tend to remain focused on financing gaps and flows of sustainable and unsustainable finance. What is missing, however, is a comprehensive framework that connects a picture of sustainability-related needs and flows with an analysis of how the system is performing.

*The Inquiry has undertaken initial work in developing a performance framework that can be used to assess progress in developing a sustainable financial system,* which as the Inquiry has defined as being one that "creates, values and transacts financial assets in ways that shape real wealth to serve the long-term needs of an inclusive, environmentally sustainable economy". The Inquiry has identified five principal analytical domains for a performance framework.

Each domain provides one analytical window, but this is limited if used alone. Resilience, for example, may result over extended periods from the system's continued externalization of environmental factors, a cause that would be picked up through an assessment of effectiveness. Flows, similarly, may be considerable, but require large public incentives, or be associated with very low levels of system efficiency (i.e. high costs). Thus, whilst each domain can provide useful analytics, they all need to be deployed to gain a more complete picture.[265]

FIG 12 AN INTEGRATED PERFORMANCE FRAMEWORK FOR A SUSTAINABLE FINANCIAL SYSTEM

| DOMAIN | DESCRIPTION | COMMENT |
|---|---|---|
| REQUIREMENTS | Capital required to finance sustainable development | Covering (a) deployment of capital to fund incremental assets or activities; (b) elimination of "unsustainable" assets and activities previously funded by capital; and, (c) reserving capital against conditions that could challenge sustainability, including insurance against the consequences of the realization of risks. |
| FLOWS | Flows of finance against such requirements | Providing a common approach for measuring actual flows, building on existing methodologies for example, around climate finance and green bonds, as well as the system being developed by FEBRABAN in Brazil.[266] This flow analysis does not clarify the effectiveness or efficiency of securing such flows, such as the level of public incentives and other costs of mobilization. |
| EFFECTIVENESS | Degree to which markets price sustainability factors are into asset values | Core to assessing existence of market failures, although need to distinguish failures associated with real or financial economy market and/or policy weaknesses. |
| EFFICIENCY | Costs of running the financial system that delivers financial flows against requirements | Includes both transaction-specific and comprehensive financial system costs. |
| RESILIENCE | Susceptibility of the system to disruptions related to unsustainable development | Covering the direct impact of environmental stress as well as impacts of transitional effects. This is inherently future-oriented and requires (a) analysis over extended time periods; and (b) distinguishing higher levels of resilience through externalization and internationalization of sustainability factors. |

# NEXT STEPS

Chapter ● 5

# NEXT STEPS

## 5.1 TAKING THE NEXT STEPS

*This final section outlines the next steps to build on the innovations and opportunities identified by the Inquiry.*

*The Inquiry was initiated in the context of both an urgent need to mobilize finance for sustainable development, and a sense of potential for action within the financial system as a new, complementary pathway for change.* The Inquiry's core task has been to determine whether there is such a potential and, if so, to set out possible next steps. Almost two years on, the Inquiry has determined that the potential does exist, shaped by the urgency of needs and the practical experience of central banks, financial policy-makers and regulators, and standard-setters in seeking to internalize environmental and social factors into financial decision-making.

*The Inquiry, furthermore, has identified patterns and trends across diverse contexts* that begin to enable lessons to be learned, more effective steps to be replicated and scaled, and cooperative approaches to be developed. The Inquiry's Framework for Action consolidates these lessons to enable decision makers to take a systematic approach to analysis, engagement, policy formulation and action. Leadership, necessary to shape new pathways that may be counter to conventional wisdoms, has become more visible during the Inquiry's explorations. In fact, there has been a rapid increase in the number, scope and scale of ambition of initiatives, even over the period of the Inquiry.

*Much still needs to be done.* Analysis of the performance of the tools highlighted by the Inquiry needs to be deepened. Many aspects of the linkages between the financial system and sustainable development remain underexplored. Differing national contexts and priorities necessitate unique pathways to be shaped through collaboration, analysis and action, and international cooperation needs to be recast in the light of the opportunities and needs pointed to through the Inquiry.

## 5.2 MAKING IT HAPPEN

*Implementing the Inquiry's findings using the Framework for Action will require the involvement of many actors.* Core is the active involvement of stewards of the financial system, including Central Banks, regulators and prudential authorities, standard setters, government bodies including Ministries of Finance, and market-based rule-setters including stock exchanges and credit rating agencies.

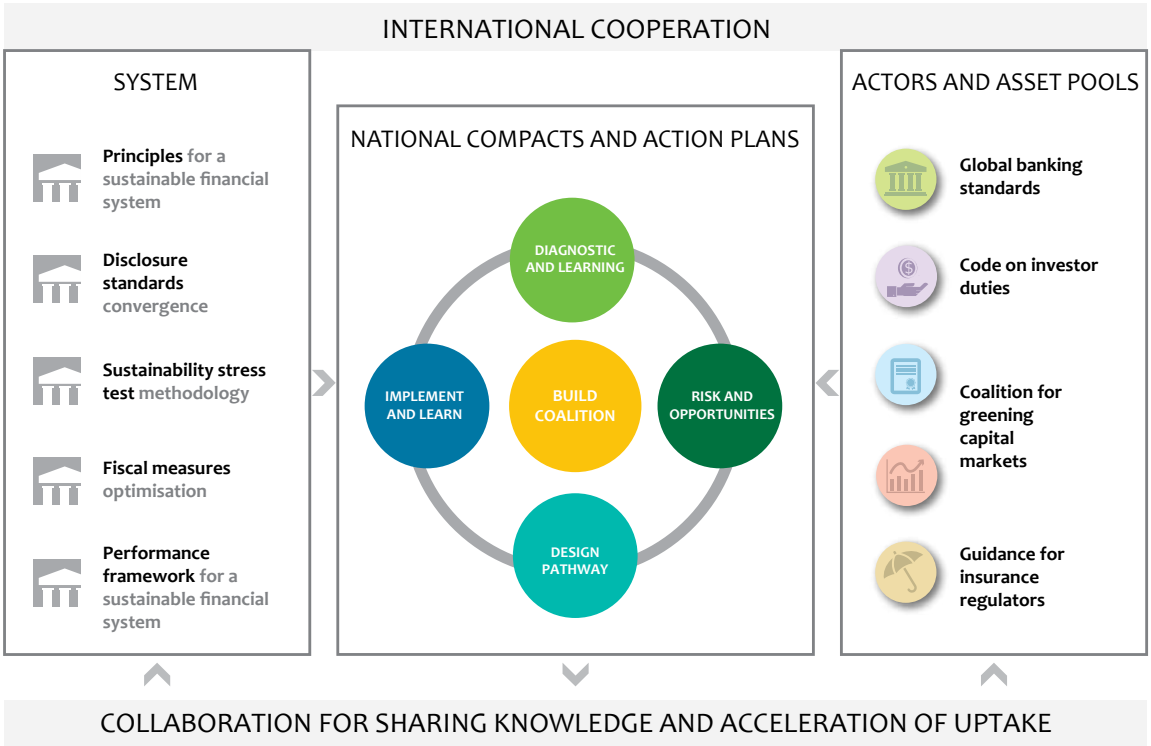
*Yet the Inquiry's findings highlight the critical role of other actors, notably:*

- *Market institutions:* from banks to pension funds and analysts, contributing through exemplary leadership, knowledge development and expert guidance, coalition building and advocacy.
- *Sustainable development community*: from environmental ministries to think tanks, civil society groups and international agencies such as UNEP – bringing expert knowledge, coalition and public awareness building.
- *International organizations*: those directly involved in financial system development, but more broadly those stewarding forward diverse aspects of sustainable development, knowledge development and learning, norm building and standards development, and critically coordination.
- *Individuals*: as consumers of financial services, as employees of financial institutions and as participants in civil society - bringing unique skills and perspectives on how to connect the financial systems with human needs and aspirations.

The Inquiry has highlighted the importance of social compacts in advancing the alignment of financial market and sustainable development, and many of the above actors need to engage in such coalitions in their respective roles, nationally, regionally and internationally. That said, the Inquiry's findings point to major knowledge deficiencies regarding the financial system particularly for citizens groups, the environmental and broader sustainable development community, and symmetrically for financial system experts when it comes to, sometimes even the basics about the environment. Whilst specialization is a feature of institutional maturity, these deficiencies need to be overcome if compacts and associated measures are to be effective.

Broadening the engagement of actors in the reshaping of the financial system takes on particular significance given the need to understand, plan for, and manage trade-offs between the ease, impact and risks associated with different policy options. Diverse coalitions will be better placed to effectively build roadmaps that take account of the need for ambition, the costs of implementation and the risk of failure or negative unintended consequences.

FIG 13 SUMMARY OF NEXT STEPS



## 5.3 NATIONAL ACTION

*Action can most immediately be taken at the national, and sometimes at the regional or sub-national, levels.* This is where many of the innovations identified by the Inquiry have emerged. Every government, working with public and regulated bodies – central banks, stock exchanges and accounting bodies – and with financial institutions themselves – banks, pension funds, etc. – has the opportunity to significantly shape the domestic financial system in ways that support targeted national priorities and sustainable development outcomes.

*The Inquiry's Framework for Action provides a means for systematically considering options for action,* based on practice and countries' forward-looking thinking and plans. Parts of the Framework for Action will be of varied importance to different countries.

*Each country should carefully assess the possibilities and associated benefits, costs and risks.* Ultimately, there is no substitute for each country undertaking its own diagnostic, and on that basis, building out its options for actions and means for implementation. There is no single actor that must lead on this, with evidence pointing sometimes to central banks, at other times to regulators and government ministries. In other instances, the key role of private actors in demonstrating enterprise-level and at times collective innovation, or in some cases citizen action, variously as pension fund holders, workers associations or environmental activists. In all cases, there seem to be a comparable, if broadly defined, series of steps to take:

1. **Initial diagnostic of needs,** flows, gaps and perceived barriers, often led by a very small leadership group.
2. **Assessing opportunities,** informed by international experience, and needing a wider coalition.
3. **Building structured coalition or compact** to enhance knowledge, improve choices and ease coordination.
4. **Designing a pathway** that takes account of ease and priorities, capabilities, costs, benefits and risks.
5. **Implementing with strong, rapid feedback mechanisms and** continued inflow of international experience.

### GETTING STARTED – A DIAGNOSTIC

*A diagnosis of progress made in advancing a sustainable financial system can be built using one or more of the five domains of the proposed performance framework.* An initial diagnostic of the alignment of the financial system with sustainable development will help to highlight priority areas to consider for action.

Fig 14 Diagnostic Framework

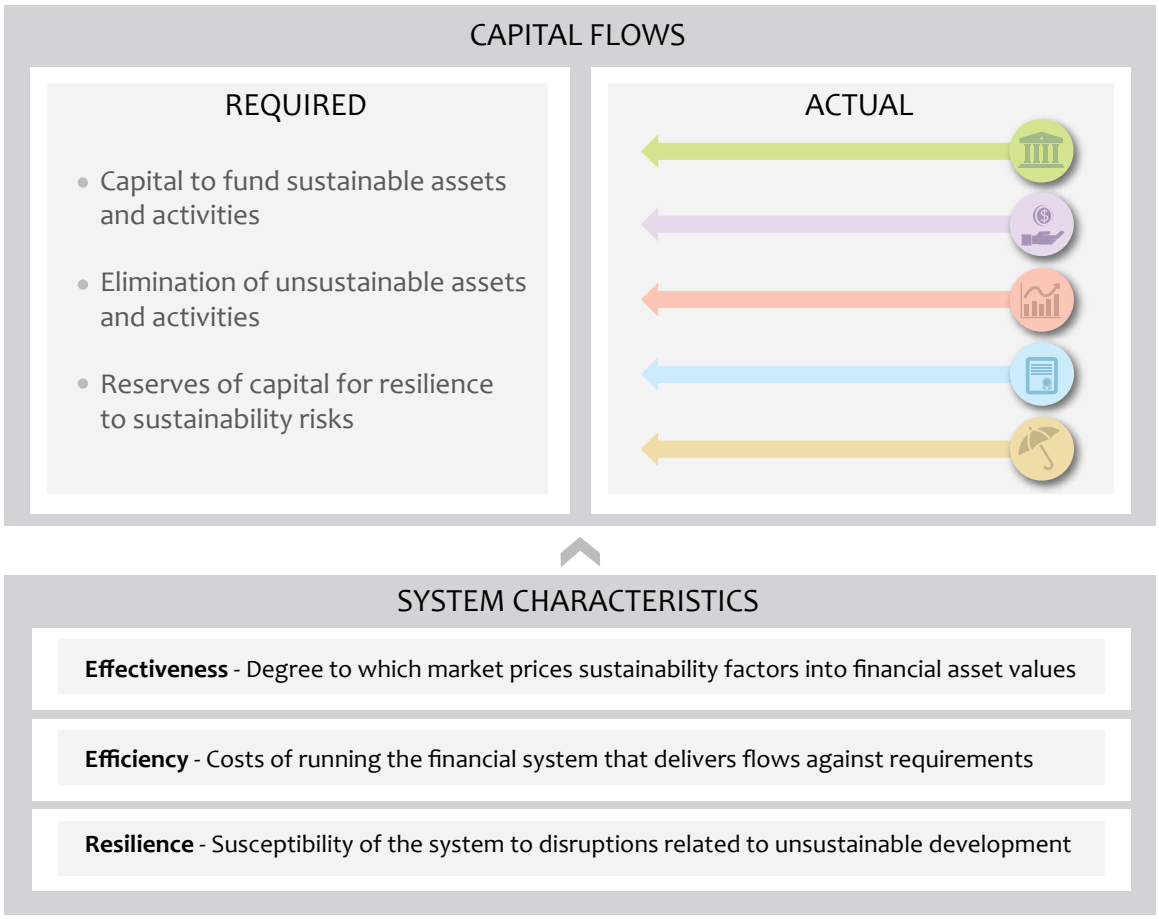



Fig 15 Diagnostic Framework in Detail

| Domain | Description | Possible Questions |
|---|---|---|
| Requirements | Capital required to finance sustainable development | • What are the financial needs to deliver national priorities for sustainable development?<br>• What is the potential for public financing? |
| Flows | Flows of finance against such requirements | • What are current levels of finance set against needs?<br>• What are the resource and pollution intensive assets and investment? |
| Effectiveness | Degree to which markets price sustainability factors are into asset values | • Where is the "sustainability spread" greatest (e.g. the differential between market pricing of assets and full cost accounting of externalities)?<br>• How well are sustainability factors incorporated into financial decision-making? |
| Efficiency | Costs of running the financial system that delivers financial flows against requirements | • How cost-effective are different parts of the system in raising finance for sustainable development (e.g. IPOs, bond issuance)?<br>• How aligned are public incentives for financial activities with sustainable development (e.g. tax breaks for savings and investment)? |
| Resilience | Susceptibility of the system to disruptions related to unsustainable development | • What are the implications of environmental shocks on the financial system, now and into the future?<br>• What are the key sources of environmental stress that could result in asset stranding? |

In particular, an assessment of:

- Requirements and flows will deliver a sense of the gap that needs to be filled.
- Effectiveness, efficiency and resilience will provide an indication of the degree to which the gap needs to be filled by action in the financial system as well as the real economy.

*Significant gaps may be associated with an efficient financial system capable of pricing environmental risks, indicating a greater need to act in the real economy.* Low levels of efficiency in delivering sustainable finance, or short-termism that reinforces the mispricing of such risks, could indicate that relatively greater action is needed in the financial economy.

*An initial diagnosis would also assess the norms and rules governing the financial system.* Drawing on both the toolbox and the Framework for Action, a diagnosis would consider the balance of policy measures taken across the five approaches: market practice, public financing, policy directed financing, cultural change and governing arrangements. Focusing on such measures would allow the diagnosis to be a useful complement to existing assessment tools, such as the IMF/World Bank's Financial Sector Assessment Program (FSAP).

*These analytics can then be linked back to the options set out in the Framework for Action.* Just as the diagnostic provides a picture of the state of the financial system in relation to financing for sustainable development, so the Framework for Action provides the basis for linking this analysis to possible policy measures, drawing on the summarized possible packages for each major asset pool and several areas of enabling financial system infrastructure.

*The Inquiry commends the use of compacts to support the co-design of high-potential, well-designed measures to align the financial system with sustainable development.* Conventional distinctions made between the actions of market actors and those of governing institutions, broadly rule-setters, ignore the potential of broader, societal processes that can raise awareness, increase trust, align expectations and form the basis for measurable commitments, whether established in voluntary or statutory terms. Some of the most ambitious and potentially impactful developments considered, at both national and international levels, were underpinned by extensive consultation between market actors and governing institutions, often involving co-design of agreed measures, together with "sticks and carrots" and public disclosure.

*Initial actions, if successful, will build appetite for more impactful measures.* Shaping how the financial system internalizes sustainable development into financial decision-making is not achieved through a "blueprint" approach set at the outset of the process.

The financial system's complexity and dynamism makes such approaches unhelpful and potentially problematic. Getting started through diagnostics, compact formation and early stage implementation of easier measures can raise trust, produce early winners, and increase the appetite for more ambitious plans and actions. System-level effects can therefore be achieved without taking early, difficult and potentially high-risk actions.

## 5.4 INTERNATIONAL COOPERATION

*International cooperation can support national action.* The increasing internationalization of national financial systems makes international cooperation a critical support in embedding sustainable development into financial decision-making. Fortunately, there are already many venues for such cooperation and initiatives underway. International organizations and formal inter-governmental and inter-agency platforms are increasingly looking to this field of inquiry and action, such as the G20 and the FSB, the IMF and the World Bank, as well as the OECD. The United Nations has contributed through the Financing for Development conference and the Sustainable Development Goals. Alongside these are a growing number of more informal platforms, such as the Sustainable Stock Exchange initiative, Sustainable Banking Network and the Access to Finance Initiative. Based on the work to date, the Inquiry has mapped out ten opportunities for strengthening international co-operation in three main areas.

*The Inquiry has identified productive international cooperation opportunities in advancing a sustainable financial system.* Each area can draw from national experience, but could significantly advance the field by raising awareness, improving cross-national learning, harmonizing approaches and building common standards. Ultimately, international cooperation is needed to ensure an alignment of major actors that shape customary norms across the financial community. The opportunities identified fall into two main groups; ones specific to particular asset pools and financial market actors, and opportunities to enhance the underlying financial system architecture.

*The final area for international cooperation is to build a collaborative research alliance on sustainable financial systems.* A critical next step in

FIG 16 INTERNATIONAL COOPERATION ACROSS SPECIFIC ASSET POOLS AND ACTORS

| AREA | DESCRIPTION |
|---|---|
| *Incorporate systemic environmental risks within global banking standards* | Building on growing national practice, there is now a case for the articulation of how systemic environmental risks affect international banking standards, notably through the Basel Accords. This could be advanced through a leadership of national banking authorities and commercial banks working with the Bank for International Settlements (BIS) and other key bodies to evaluate the critical linkages and policy implications. |
| *Develop an international code on investor duties and sustainable development* | A growing numbers of countries istaking action to encourage and direct institutional investors such as pension funds to include material sustainability factors into their investment activities. An international code would help to crystallize good practice and provide a platform for wider adoption of higher standards. This could be developed through a combined working group of leading institutional investors and pension regulators, working closely with the International Organisation of Pension Supervisors, the OECD and the World Bank. |
| *Establish a green capital markets coalition of investors and governments* | Efforts to harness debt and equity capital markets for green investment have accelerated rapidly. However there is no common platform to ensure convergence of standards and to drive essential cross-border cooperation so that global bond and equity markets can most effectively raise capital to serve sustainable development. This could be initiated through a leadership group that captures the full ecosystem, including issuers, credit ratings, development banks, institutional investors and independent agencies such as the Climate Bonds Initiative. |
| *Introduce guidance for regulators and supervisors on sustainable insurance markets* | Considerable progress has been made to broaden access to vital insurance products. The next step is to build on this practical experience to ensure that critical environmental and sustainability risks are effectively incorporated into the implementation of the international Insurance Core Principles. A key element for success would be a leadership group of supervisors at the national level who have started to address environmental risks (such as climate change), working closely with the IAIS and the A2ii. |

Fig 17 International Cooperation in Advancing Governing Architecture

| Area | Description |
|---|---|
| *Principles for a Sustainable Financial System* | The global financial system is governed by soft law principles and standards – but none exist for the advancement of sustainable development. Developing such principles could provide broad orientation to financial system rule-setting and development, and moreover could inform governing mandates of national and international bodies with financial system stewardship roles. Such principles could be developed under the auspices of the G20, or through and with a group of leading experts and practitioners. |
| *Convergence in sustainability disclosure standards* | The need for enhanced transparency cuts across institutions, markets and sectors. Progress has been made, but now is the time for an international task force to accelerate convergence and broader adoption, learning lessons from G20-related initiatives such as the Enhanced Disclosure Task Force. While disclosure is needed across all asset pools, a focus on harmonization across stock exchanges might make most progress initially, with a second focus on institutional investors. |
| *Sustainability stress test methodologies* | Bringing future shocks into today's decisions is critical in overcoming the "tragedy of horizons" in factoring sustainable development into financial decision-making. Now is time to pool resources and begin to build connectivity between different initiatives and approaches. Such a task force approach might include the Bank for International Settlements and the Financial Stability Board and other key standards institutions, as well as financial institutions themselves and selected reporting initiatives. |
| *Optimization of fiscal measures in the financial system* | There is no baseline understanding of the sustainable development impacts of public finance, in effect, the subsidies that accrue to financial institutions, or otherwise influence financial decision-making. It is only recently, for comparative purposes, that fossil fuel, and more broadly, energy subsidies have become more visible and treated a mainstream policy issue. Establishing a review process of the sustainability impacts of public financing associated with the financial sector might well reveal significant opportunities for enhancing such impacts through the realignment of some public financing flows. |
| *Sustainable financial system performance framework* | Work is needed to build on the Inquiry performance framework, relevant to the development of a sustainable financial system. In order for environmental aspects to be included in international peer review and assessment processes, such as the IMF/World Bank's Financial Sector Assessment Program (FSAP) they would have first to be codified into some an international standard and the data required to operationalize approach would need to be developed lacking at a country level. |

the evolution of more sustainable financial systems is the development of a rich ecosystem of research and analysis. This goes beyond the design of specific tools (such as sustainability stress tests) or statistics (performance framework) to encompass the multi-disciplinary and multi-dimensional nature of the challenge, deepening the theoretical and empirical foundations for action. The time is now ripe for a consortium of central bank and financial regulator research divisions to join with leading universities and centres of excellence to identify a medium-term research programme.

## 5.5 TOWARDS A SUSTAINABLE FINANCE SYSTEM

*The Inquiry's work points to how progress can be made in advancing towards a sustainable financial system, yet much remains to be done in understanding the relationship between financial market development and sustainable development.* How best to model the relationship between sustainable development and financial system development remains an open question. The Inquiry's proposed Performance Framework provides one possible basis for such an analysis, but much of the data required to operationalize this ap-

proach is currently lacking at a country level, let alone for international, comparative purposes.

Recent research by the IMF and the Bank for International Settlements has advanced one aspect of this relationship through an in-depth quantitative analysis of the relationship between economic growth and financial system development. This work suggests a bell-shaped relationship, with the impact of the financial sector on its host (domestic) economy-wide productivity and growth[267] first increasing and then falling as the financial sector continues to develop and grow relative to the size of that economy.[268]

Comparable hypotheses can be advanced as to the relationship between financial system development[269] and the evolution of environmental and broader sustainable development outcomes. Indeed, recent work by the OECD and others suggest a patterned relationship between financial system development and income inequality. Two testable hypotheses are proposed here: one reflects the "business-as-usual" relationship between financial systems and sustainable development, and one views the relationship if there was progress towards a sustainable financial system. These hypotheses are set out in the box below.

Visualizing, and ultimately testing such hypotheses, can make use of a two axis model with the increasing importance of financial markets indicated by the same measure as that adopted by the IMF, Financial sector and Financial Market Development, expressed as the Financial Development Index, and with impact measures focused on economic benefits, societal impacts and natural capital. In lieu of, or in combination with, development, hypotheses tests can also use the relative size of the financial sector, as in the BIS study.

## 5.6 FINANCING SUSTAINABLE DEVELOPMENT

*The Inquiry has revealed the potential for financing sustainable development by aligning the financial system with sustainable development.* Today's dispersed, practical experience can form the basis of a systematic approach to advancing such an alignment. Pathways can be designed that balance ambition, ease and risks, and that over time can trigger systemic change. Such approaches can be crafted by coalitions, informed and further amplified through international cooperation. Failure to grasp this opportunity would make it difficult to achieve the recently established Sustainable Development Goals, particularly those dependent on economic development founded on the sound stewardship of inclusive natural and social wealth.

*Progressing a sustainable financial system may improve the efficiency, effectiveness and resilience of the system itself.* Measures to align the financial system towards environmental risks and sources of value, taken one by one, are unlikely to protect society from other financial system weaknesses that enable mispricing, rent-taking and instability. However, change in complex adaptive systems such as finance can be triggered by the development of new behavioural norms anchored in a renewed sense of purpose. The impacts of such measures can be more than the sum of their parts. Implemented with ambition, care and engagement, such measures can trigger broader, system-level shifts. An initial focus on specific goals, such as financial inclusion, air pollution or climate change, can reveal fresh ways of achieving traditional goals for the system in new contexts.

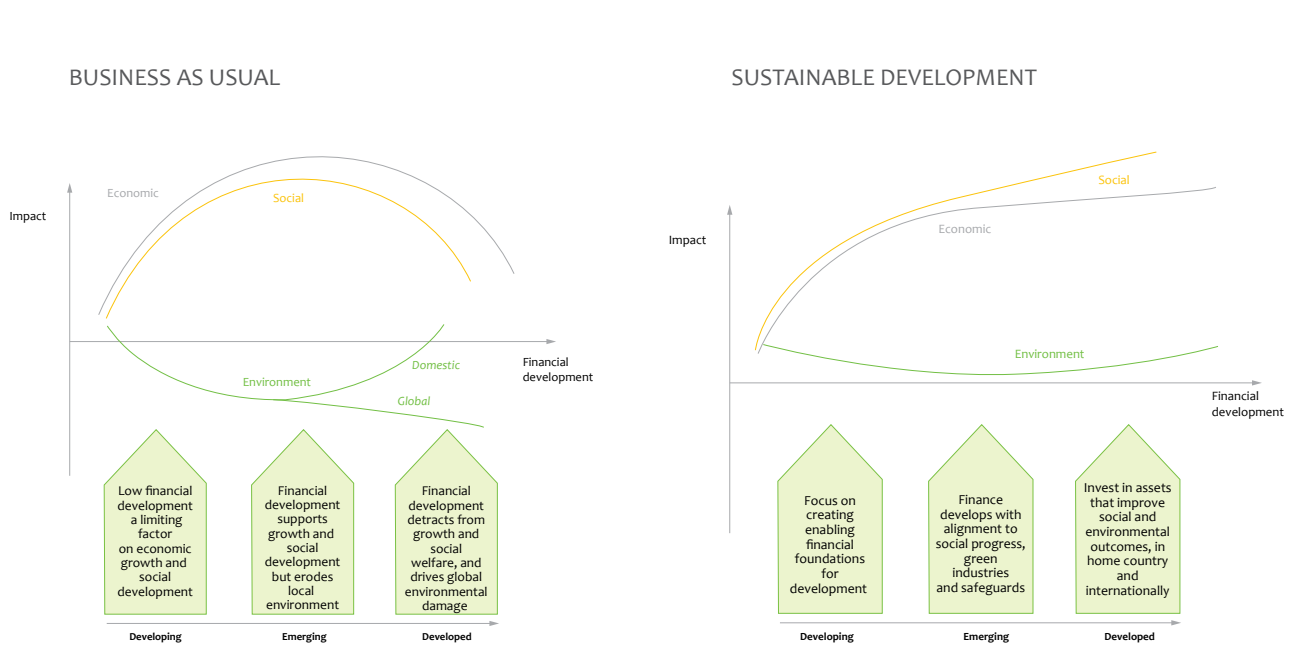
*Realizing the potential identified is essentially a matter of public choice.* The shape of today's financial system is a result of many historical choices. There was never a blueprint, certainly, but the system was formed by changing societal needs and expectations, associated policy decisions and the dynamic response to arising opportunities by market actors. The Inquiry's findings point to a new generation of such public choices being made by institutions whose task is to shape tomorrow's financial system.

*At stake is the potential to shape a financial system fit for the 21st century* purpose of serving the needs of sustainable development.

## Fig 18 How Might Financial System Development Impact Sustainable Development Outcomes

| Stage of Financial System Growth and Development | System Hypothesis | |
|---|---|---|
| | Business as Usual | Sustainable |
| **Relatively small and under-developed financial systems** (generally smaller and poorer developing countries, mainly bank-dominated) | Modest impact, positive or negative, on sustainable development outcomes, economic, social and environmental. | Similarly modest impacts, with some more positive outcomes, e.g. resulting from measures to promote financial inclusion, green credit guidance, improved financial culture and capabilities. |
| **Growing and developing financial systems** (generally emerging economies from Kenya to Peru and China) | Disproportionately high, positive economic impacts in host country (i.e. IMF findings).<br>Comparably high, positive social impacts, albeit with increasingly unequal impacts, in host country, principally through economic growth effects.<br>High, negative environmental effects in the host country as a major portion of lending and investment negatively impacts natural capital. | High positive economic and social outcomes, with improved environmental impacts resulting from better risk management and liability measures, focused public incentives, and efforts to green capital markets through product innovations (e.g. green bonds) and enhanced disclosure and governance requirements. |
| **Relatively large and developed financial systems** (principally in the OECD, but including some unusually advanced financial systems in emerging economies) | Reducing positive, and potentially negative, impact on economic productivity and growth (i.e. IMF and BIS findings), associated declining positive effects on social capital, and a bifurcated environmental impact, with lower negative host country impacts and higher, negative global environmental effects. | Positive economic impacts alongside slowing overall growth, continuing delivery of social benefits and improved host country and global environmental outcomes from effective financial institution disclosure and stress testing, along with fully scaled up capital market mechanisms. |

## Fig 19 Visualizing Hypothesized Financial System-Sustainable Development Relationships



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263 *http://www.financialstabilityboard.org/what-we-do/about-the-compendium-of-standards/*

264 World Bank (2014). Ibid.

265 Importantly, these indicators should be measured over time and assessed carefully. Financial requirements may fall over time as technology improves, or rise as the understanding of the severity of environmental challenges is enhanced. Likewise, the aim through the efficiency measure is to understand whether the market is delivering a constant improvement in cost reduction as adoption and learning progresses or whether there are bottlenecks which policy could help remove. Finally, the performance of a single financial system is, of course, critically connected with global factors: decisions taken in one country to curb pollution may affect assets held in another country and investors based in yet another jurisdiction. The scope of performance assessment needs to be able to capture these key interlinkages.

266 For example in relation to low carbon investment the Climate Policy Initiative has sought to track global investment flows, see Buchner, B., Stadelmann, M., Wilkinson, J., Mazza, F., Rosenberg, A. and Abramskiehn, D. (2014). Landscape of Climate Finance 2014. Venice: Climate Policy Initiative. Flow analysis does not clarify the effectiveness or efficiency of securing such flows, such as the level of public incentives and other costs of mobilization

267 Growth, size, largeness and smallness refer to the size of the financial sector relative to the economy as a whole. It can be measured in many ways, including percentage of GDP or National Income. The measure employing the most widely available data and used in the BIS study is employment within the sector. See Cecchetti, S. and Kharroubi, E., BIS Working Papers, "Reassessing the Impact of Finance on Growth," July 2012, available at *http://www.bis.org/publ/work381.pdf*; Philippon, T. and Reshef, A., NBER Working Papers, "Wages and Human Capital in the US Finance Industry: 1909 through 2006," January 2009, available at *http://www.nber.org/papers/w14644*.

268 The authors of the BIS study suggest reasons for this relationship in a subsequent study sponsored by BIS [Cecchetti, S., and

Kharoubbi, E., BIS Working Papers, "Why Does Financial Sector Growth Crowd Out Real Economic Growth," February 2015, available at *http://www.bis.org/publ/work490.htm*]. The interaction between financial sector growth and real growth is seen as tied to the correlation of financial sector growth with projects that are "pledgeable," that is to say that they are readily useable as collateral in financings but in which productivity is relatively low. Growth of the financial sector disproportionately benefits high collateral/low productivity projects.

269 Development refers to an array of characteristics such as the Financial Development Index used in the IMF sponsored study that is a weighted average of depth, access and efficiency of both financial institutions and financial markets. See IMF Staff Discussion Note "Rethinking Financial Deepening: Stability and Growth in Emerging Markets," May 2015, available at *https://www.imf.org/external/pubs/ft/sdn/2015/sdn1508.pdf*

# APPENDIX I: ACKNOWLEDGEMENTS

## INQUIRY TEAM

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Head of Outreach

**Nick Robins**
Co-Director

**Simon Zadek**
Co-Director

The Inquiry has been supported throughout the project by Maya Forstater, Nana-Ofori Okyere and Felicity Perry. The broader team over the 2 years has included Agnes Atsiaya, Chad Carpenter, Peter Cruickshank, Cheryl Hicks, Nozipho January-Bardill, Olivier Lavagne d'Ortigue, Andrea Liesen, Jeremy McDaniels, Sandra Rojas, Shereen Wiseman, Sarah Zaidi and Nuohan Zhang.

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# APPENDIX II: ABBREVIATIONS

| | |
|---|---|
| **A2ii** | Access to Insurance Initiative |
| **ASrIA** | Association for Sustainable and Responsible Investment in Asia |
| **BACEN** | Brazilian Central Bank |
| **BIS** | Bank for International Settlements |
| **BOVESPA** | Bolsa de Valores, Mercadorias & Futuros de São Paulo (Sao Paulo Stock Exchange) |
| **CalPERS** | California Public Employees Retirement Scheme |
| **CDP** | (Formerly Carbon Disclosure Project) |
| **CDSB** | Climate Disclosure Standards Board |
| **CFA** | Chartered Financial Analyst |
| **COP 21** | 21st Conference of the Parties of the UNFCCC (Paris, 2015) |
| **CRISA** | Code for Responsible Investing in South Africa |
| **FEBRABAN** | Federação Brasileira das Associações de Bancos (Brazilian Banker's Association) |
| **FGV** | Fundação Getulio Vargas |
| **FICCI** | Federation of Indian Chambers of Commerce and Industry |
| **FSAP** | Financial Sector Assessment Program (IMF/World Bank) |
| **FSB** | Financial Stability Board |
| **FSC** | Financial Services Charter (South Africa) |
| **G20** | Group of 20 largest world economies |
| **GDP** | Gross Domestic Product |
| **GHG** | Greenhouse Gas |
| **GRI** | Global Reporting Initiative |
| **IAIS** | International Association of Insurance Supervisors |
| **IEA** | International Energy Agency |

| | |
|---|---|
| **IFC** | International Finance Corporation |
| **IIRC** | International Integrated Reporting Council |
| **IISD** | International Institute for Sustainable Development |
| **IMF** | International Monetary Fund |
| **IOSCO** | International Organization of Securities Commissions |
| **IPCC** | Intergovernmental Panel on Climate Change |
| **IPO** | Initial Public Offering |
| **OECD** | Organisation for Economic Cooperation and Development |
| **OJK** | Otoritas Jasa Keuangan (Indonesia's Financial Services Regulator) |
| **PBC** | People's Bank of China |
| **PRI** | Principles for Responsible Investment |
| **SASB** | Sustainability Accounting Standards Board |
| **SDGs** | Sustainable Development Goals |
| **SME** | Small and Medium Enterprise |
| **UN PSI** | United Nations Principles for Sustainable Insurance |
| **UNCTAD** | United Nations Conference on Trade and Development |
| **UNEP** | United Nations Environment Programme |
| **UNEP FI** | United Nations Environment Programme Finance Initiative |
| **UNFCCC** | United Nations Framework Convention on Climate Change |
| **UNGC** | United Nations Global Compact |
| **US SEC** | United States Securities and Exchange Commission |
| **WB** | World Bank |

# APPENDIX III: COLLABORATING INSTITUTIONS

The following institutions have been involved in the Inquiry's research and engagement programme, including attending events.

2° Investing Initiative
3GF
A CAPITAL Green Fund
Aegon NV
African Union Commission
Agence Francaise de Developpement
Alexander Forbes Kenya
Alliance for Financial Inclusion
Allianz
Allianz Seguros
Altermind
Amundi
AP4, Sweden
Apollo Investment
Arabesque Partners
Architas
Asobancaria
Asofiduciarias
Asofondos
Association for Sustainable & Responsible Investment in Asia
Autorité de Contrôle Prudentiel et de Résolution
Aviva
AXA
B Capital Partners
Banco Agrario
Banco Bilbao Vizcaya Argentaria
Banco Central Do Brasil
Banco de Bogotá
Banco de la República
Banco Santander
Bancoldex
Bancolombia
Bangladesh Bank
Bank Al-Maghrib
Bank Indonesia
Bank of America Merrill Lynch
Bank of England
Banking Association of South Africa
Barclays
Bloomberg
Bloomberg New Energy Finance
BT Pension Fund
Caisse des Dépôts
CalPERS
Calvert
Cambridge Institute for Sustainability Leadership
Carbon Tracker Initiative
CDP
Center for Applied Legal Studies
Center for International Governance Innovation
Central Bank of Kenya
Central Bank of Mexico
Central University of Finance and Economics, China
Centre d'Études Prospectives et d'Informations Internationales
Centre for Policy Research
Centre for Science and Environment
Ceres
CFA Institute, UK
Chatham House
China Council for International Cooperation on Environment and Development
Citibank N.A
Climate Bonds Initiative
Climate Disclosure Standards Board
Climate Policy Initiative
Commercial Bank of Africa
Competition and Markets Authority
Corpbanca Investment Trust Colombia
Council on Economic Policies
CPF Financial Services
Credicorp Capital
Credit Suisse
Danish Institute for Human Rights
Davivienda
De Nederlandsche Bank
Deloitte
Demos
Department for International Development, UK
Department of Environmental Affairs, South Africa
Deutsche Bank
Development Alternatives
Development Bank of Southern Africa
Development Research Center of the State Council, China
East African Venture Capital Association
East and Central African Social Security Associtation
Eco Forum Global
Ecos
Eko Asset Management Partners
Établissement de Retraite Additionnelle de la Fonction Publique
Ethical Markets Media
Ethos
European Bank for Reconstruction and Development
European Climate Foundation
European Commission
European Investment Bank
European Union
Executive Office of the President of Indonesia
Fasecolda
FCP Nexus
Federação Brasileira de Bancos
Federal Chancellery, Division of Sustainable Development, Germany
Federal Department of Finance, Switzerland
Federal Finance Administration, Switzerland
Federal Ministry for Economic Cooperation and Development (BMZ) Germany
Federal Office for the Environment, Switzerland
Fédération Française des Sociétés d'Assurance
Federation of Indian Chambers of Commerce and Industry
Fiduciaria Bancolombia

Fiduciaria La Previsora
Fidupopular S.A
Finagro
Finance Innovation Lab
Financial Market Supervisory Authority, Switzerland
Financial Services Authority, Indonesia
Findeter
Fiscal Policy Agency, Indonesia
Fitch
Fondo Acción
Fondo Inversor
Fonds de réserve pour les retraites
Foreign and Commonwealth Office, UK
France Stratégie
Frankfurt School of Finance and Management
Fridtjof Nansen Institute
Futerra
Generali Group
Genesis Kenya Investment Management
Getulio Vargas Foundation
GiZ
Global Environment Facility
Global Green Growth Institute
Global Infrastructure Basel
Global Reporting Initiative Colombia
Globalance Bank
Goldman Sachs
Green Climate Fund
Green Growth Knowledge Platform
Group of Thirty
Grupo Argos S.A.
Gulf African Bank
HDFC Bank
HELIO International
Hermes
HSBC
IFMR Holdings
Indian Banks Association
Indonesia Infrastructure Finance
INNpulsa Colombia
Inrate
Institut de Sciences Politiques Paris
Institute for Climate Economics
Institute for Human Rights and Business
Institute for New Economic Thinking
Institute for Public Policy Research
Institute for Social Banking
Institute for Sustainable Development and International Relations
Institute of International Finance
Institutional Investors Group on Climate Change
Insurance Europe
Intact Financial Corporation
International Accounting Standards Board
International Association of Insurance Supervisors
International Finance Corporation
International Institute for Sustainable Development
International Labour Organization
International Monetary Fund
International Union for Conservation of Nature
Inverlink
Investor Responsibility Research Center Institute
Jackson Globus and Co.
Johannesburg Stock Exchange
Joint Institute for Strategic Energy Analysis at the National Renewable Energy Laboratory
JPMorgan Chase Bank, N.A.
Kenya Bankers Association
Kenya Commercial Bank
Kepos Capital
Khazanah Research Berhad
Kiran Energy Solar Power
Laptrust Pension Fund
London School of Economics and Political Science
McKinsey & Company, Inc.
MetLife
Mind the Gap Research and Training
Ministerio de Ambiente y Desarrollo Sostenible (Colombia)
Ministerio de Hacienda (Colombia)
Ministry of Economy and Finance, France
Ministry of Environment, UAE
Ministry of Environment, Water and Natural Resources, Kenya
Ministry of Finance and Public Credit, China
Ministry of Finance, Indonesia
Ministry of Finance, Netherlands
Ministry of Finance, Planning and Economic Development, Switzerland
Ministry of Finance, South Africa
Ministry of Finance, Uganda
Ministry of Foreign Affairs, Norway
Monetary Authority of Singapore
Moody's
Morgan Stanley
Munich Re
Nairobi Securities Exchange
National Institute of Public Finance and Policy, India
Nedbank
NEPAD Business Foundation
Network for Sustainable Financial Markets
New Climate Economy
New Economics Foundation
Observer Research Foundation
Office of the High Commissioner for Human Rights
Old Mutual
Organisation for Economic Co-operation and Development
Paulson Institute
PensionDanmark
People's Bank of China
Politico
Porvenir
Pricewaterhouse Coopers
Principles for Responsible Investment
Prudential plc
PUBLICA
Re-Define
REN21
Renmin University
Research Institute of Finance of the Development Research Council, China
Retirements Benefit Authority
RobecoSAM
Rock Creek Global Advisors
Rockfeller Brothers Fund
Rockfeller Foundation
Rocky Mountain Institute
Rothschild
School of Advanced International Studies, John Hopkins University
SCOR SE
Seguros Bolivar
Shakti Sustainable Energy
Singapore Management University
SIX Group
Small Industries Development Bank of India
Smith School of Enterprise and the Environment, University of Oxford
Société Générale

South African Institute of International Affairs

Staff Planète

Standard & Poor's

Standard Chartered Bank

State Secretariat for Economic Affairs, Switzerland

State Secretariat for International Financial Matters, Switzerland

SulAmerica

SunEdison

Superintendencia de Bancos y Seguros de Peru

Superintendencia Financiera, Colombia

Sustainable Development Solutions Network

Sustainalytics Colombia

Swedish National Pension Fund

Swiss Bankers Association

Swiss Re

Swiss Sustainable Finance

Swisscanto

Tellus Institute

The Cooperators

The Energy and Resources Institute

The Geneva Association

The Shift Project

The World Bank Group

Toulouse School of Economics

Trapeza

Tribeca Asset Management

TRUST

TV2 Danmark

UK Treasury

UN Department of Economic and Social Affairs

UN Economic Commission for Africa

UN Economic Commission for Asia

UN Economic Commission for Europe

UN Global Compact

UN Office of the Secretary General

UN Principles for Sustainable Insurance

UN Women

UNEP Finance Initiative

Unilever Pension Fund

United Nations Conference on Trade and Development

United Nations Development Programme

United Nations Environment Programme

United Nations Framework Convention on Climate Change

Universitas Gadjah Mada

Universitas Indonesia

Universitas Surya

Universitas Trisakti

University of Edinburgh

University of Geneva

University of Gothenburg

University of Leipzig

University of New South Wales

University of Pretoria

University of Surrey

University of Washington

University of Zurich

US Treasury

Utrech Sustainable Finance Lab

Vittoria Assicurazioni

VoxEU

Walden Green Energy

Welspun Energy

Willis Research Network, Willis Group

World Business Council on Sustainable Development

World Economic Forum

World Resources Institute

World Wide Fund for Nature

Yes Bank

York University

Zurich Insurance Group

# APPENDIX IV: INQUIRY FULL LIST OF REPORTS AND PAPERS

## Inquiry update reports

UNEP Inquiry (2014). Invitation. Update Report 1: January 2014. Geneva: UNEP.

UNEP Inquiry (2015). Insight from Practice. Update Report 2: October 2014. Geneva: UNEP.

UNEP Inquiry (2015). Pathways to Scale. Update Report 3: January 2015. Geneva: UNEP.

UNEP Inquiry (2015). The Coming Financial Climate. Update Report 4: April 2015. Geneva: UNEP.

UNEP Inquiry (2015). Aligning Africa's Financial System with Sustainable Development. Geneva: UNEP.

UNEP Inquiry (2015). Aligning the Financial Systems in the Asia Pacific Region to Sustainable Development. April 2015. Geneva: UNEP

## Country focused papers

2 Degrees Investing Initiative (2015). Europe Framework Paper. UNEP Inquiry Working Paper/2 Degrees Investing Initiative.

Barkawi, A., and Monnin, P. (2015). Monetary Policy and Sustainability - the Case of Bangladesh. UNEP Inquiry Working Paper/CEP.

Bourdon, J., McDaniels, J. and Robins, N. (2015). Aligning finance to sustainable development in the UK. UNEP Inquiry Working Paper

CDC Climat (forthcoming). Aligning Finance to Sustainable Development in France. UNEP Inquiry Working Paper

Center for Sustainability Studies at Getulio Vargas Foundation (GVces/FGV-EAESP) (2015). The Brazilian Financial System and the Green Economy: Alignment with Sustainable Development. UNEP Inquiry/Center for Sustainability Studies at Getulio Vargas Foundation

China Green Finance Taskforce (2015). Establishing China's Green Financial System. UNEP Inquiry/People's Bank of China. Also see sub-papers:

- Background Paper A: Theoretical Framework Of Green Finance
- Background Paper B: International Experience Of Green Finance
- Detailed Recommendation 1: Create A Green Banking System
- Detailed Recommendation 2: Develop Green Funds
- Detailed Recommendation 3: Green The Development Banks
- Detailed Recommendation 4: Strengthen Discounted Green Loans
- Detailed Recommendation 5: Promote The Issuance Of Green Bonds
- Detailed Recommendation 6: Create A Green IPO Channel
- Detailed Recommendation 7: Promote Development Of Emissions Trading Markets
- Detailed Recommendation 8: Establish A Green Rating System
- Detailed Recommendation 9: Create A Green Stock Index
- Detailed Recommendation 10: Develop Environmental Cost Analysis
- Detailed Recommendation 11: Create Green Investor Networks
- Detailed Recommendation 12: Create A Compulsory Green Insurance System

- Detailed Recommendation 13: Establish The Legal Liability Of Financial Institutions
- Detailed Recommendation 14: Make Environmental Information Disclosure Mandatory

Federal Office for the Environment (2015). Design of a Sustainable Financial System: Swiss Team Input into the UNEP Inquiry

FICCI (2014). Designing a Sustainable Financial System for India: Interim Report. UNEP Inquiry/Federation of Indian Chambers of Commerce and Industry.

FICCI (forthcoming). Building a sustainable financial system to serve India's development needs. UNEP Inquiry/ Federation of Indian Chambers of Commerce and Industry.

Krosinsky, C. (forthcoming). US Green Investment. UNEP Inquiry Working Paper.

Murai, C. (2015). A step-change towards Long-term Sustainable Financial and Capital Markets in Kenya. UNEP Inquiry/IFC.

Naidoo, S. and Goldstuck, A. (2015). South Africa Financial Governance Innovations. Global Green Growth Institute/ UNEP Inquiry.

Naidoo, S. and Goldstuck, A. (2015). South Africa Scoping Paper. Global Green Growth Institute/UNEP Inquiry.

Turbeville, W. (forthcoming). Aligning the Financial System with Sustainable Development in the USA. UNEP Inquiry Working Paper. DEMOS/UNEP Inquiry.

UNEP Inquiry/IFC (2015). Aligning Colombia's Financial System with Sustainable Development. UNEP Inquiry/IFC.

Volz, U. and Zadek, S. (2015). Indonesia - Towards a Sustainable Financial System. UNEP Inquiry/IFC/ASrIA.

Zhang, C., Zadek, S., Chen, N. and Halle, M. (2015). Greening China's Financial System: Synthesis Report. Development Research Centre/ IISD. also see Chinese expert sub-papers:

- Zhuo, X. and Zhang, L. (2015). Green Finance Framework Paper. In Greening China's Financial System (Zhang, Zadek, Chen and Halle (Eds)). DRC/IISD with UNEP Inquiry.
- Zheng, Z. (2015). Demand for Green Finance. In Greening China's Financial System (Zhang, Zadek, Chen and Halle (Eds)). DRC/IISD with UNEP Inquiry.
- Zhong, M. and Lan, H. (2015). Environmental and Industrial Policy Environment for the Development of Green Finance in China (2015). In Greening China's Financial System (Zhang, Zadek, Chen and Halle (Eds)). DRC/IISD with UNEP Inquiry.
- Tian, H. (2015). Lessons from China's Experience of Development of Green Finance. In Greening China's Financial System (Zhang, Zadek, Chen and Halle (Eds)). DRC/IISD with UNEP Inquiry.
- Wang, G. (2015). Problems and Difficulties in the Development of China's Green Financial System. In Greening China's Financial System (Zhang, Zadek, Chen and Halle (Eds)). DRC/IISD with UNEP Inquiry.

## Thematic papers

ASrIA/IFC/UNEP Inquiry (forthcoming). Exploring Financial Policy and Regulatory Barriers to Private Climate Finance in South-East Asia. ASrIA.

Bacani, B., McDaniels, J. and Robins, N. (2015). Insurance 2030: Harnessing Insurance for Sustainable Development. UNEP Inquiry Working Paper. UNEP Inquiry/PSI.

Bacani, B. (2015). A systemic view of the insurance industry, regulation and sustainable development: International developments and policy proposals for China. In Greening China's Financial System (Zhang, Zadek, Chen and Halle (Eds)). DRC/IISD with UNEP Inquiry.

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Caldecott, B. and McDaniels, J. (2014). Financial Dynamics of the Environment: Risks, Impacts, and Barriers to Resilience. UNEP Inquiry Working Paper. UNEP Inquiry/Smith School, Oxford University.

Chenet, H. (2015). Financial Risk and the Transition to a Low-Carbon Economy: Towards a Carbon Stress Testing Framework. UNEP Inquiry Working Paper. UNEP Inquiry/2 Degrees Investing Initiative.

Clarke, T. and Boersma, M. (forthcoming). A Critical Analysis of The Regulation, Policies, Strategies Implementation and Reporting on Sustainability in International Finance. UNEP Inquiry Working Paper. UNEP Inquiry.

Cleary, S. (forthcoming). The role of Stock Exchanges in Sustainable Development. UNEP Inquiry Working Paper. UNEP Inquiry.

Dupré, S. and Thomä, J. (2015). Alignment of Investment Strategies with Climate Scenarios: Perspectives for Financial Institutions. In Greening China's Financial System (Zhang, Zadek, Chen and Halle (Eds)). DRC/IISD with UNEP Inquiry.

Eccles, R. G. and Youmans, T. (forthcoming). Materiality in Financial Services. UNEP Inquiry Working Paper. UNEP Inquiry.

Glemarec, Y., Bardoux, P. and Roy, T. (2015). The Role of Policy-Driven Institutions in Developing National Financial Systems for Long-Term Growth. UNEP Inquiry Working Paper. UNEP Inquiry.

Greenham, T., McCann, D. and Ryan-Collins, J. (2014). Financial System Impact of Disruptive Innovation. UNEP Inquiry Working Paper. UNEP Inquiry/new economics foundation

Hawkins, P. (2015). Design Options for a Sustainable Financial Sector: Lessons from Inclusive Banking Experiments. UNEP Inquiry Working Paper. UNEP Inquiry.

Henderson, H. (forthcoming). Reforming Electronic Markets and Trading. UNEP Inquiry Working Paper. UNEP Inquiry/Ethical Markets Media

Jackson, T. and Victor, P. (2015). Towards a Stock-Flow Consistent Ecological Macroeconomics. UNEP Inquiry Working Paper. UNEP Inquiry.

Kapoor, S. (2015). Internalising Climate Mitigation for Financial Policymakers. In Greening China's Financial System (Zhang, Zadek, Chen and Halle (Eds)). DRC/IISD with UNEP Inquiry.

Kidney, S. and Harwood, A. (2015). Policies for Green Bonds. UNEP Inquiry Working Paper. UNEP Inquiry/WB/CBI, OECD

Kidney, S., Oliver, P. and Sonerud, B. (2015). Greening China's Bond Market: Facilitating green investment and improving transparency and stability in financial markets. In Greening China's Financial System (Zhang, Zadek, Chen and Halle (Eds)). DRC/IISD with UNEP Inquiry.

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McDaniels, J. and Robins, N. (forthcoming). Aligning Financial Cultures to Sustainable Development. UNEP Inquiry Working Paper. UNEP Inquiry.

Monnin, P. and Barkawi, A. (2015). Monetary Policy and Green Finance – Exploring the Links. In Greening China's Financial System (Zhang, Zadek, Chen and Halle. (Eds)). DRC/IISD with UNEP Inquiry.

PRI/UNEP FI/UNGC/UNEP Inquiry (2014). Policy Frameworks for Long-Term Responsible Investment: The Case for Investor Engagement in Public Policy

PRI/UNEP FI/UNGC/UNEP Inquiry (2015). Fiduciary Duty in the 21st Century. UNEP FI.

PRI/UNEP Inquiry (forthcoming). Roadmap for Credit Ratings. UNEP Inquiry Working Paper. UNEP Inquiry.

Sampaio, R.S., Diniz, E., Maristrello Porto, A.J. and Martins Lopes, L.D. (forthcoming). Lender's and Investor's Environmental Liability: How Much is Too Much? UNEP Inquiry Working Paper. UNEP Inquiry/FGV.

Schoenmaker, D., van Tilburg, R. and Wijffels, H. (forthcoming). If Saving the World is Not Profitable: The Missing Ecological Dimension of Macroprudential Supervision. UNEP Inquiry Working Paper. UNEP Inquiry.

Scholtens, B. and Veldhuisa, R. (forthcoming). How Does the Development of the Financial Industry Advance Renewable Energy? UNEP Inquiry Working Paper. UNEP Inquiry.

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Thomä, J., Strauss, D., Lutz, V. and Kulle, A.C. (forthcoming). Green SMEs and Access to Finance: the Role of Banking Diversity. UNEP Inquiry Working Paper. UNEP Inquiry/2 Degrees Investing Initiative

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van Liebergen, B. (2015). The Role of Ministries of Finance. UNEP Inquiry Working Paper. UNEP Inquiry.

Vienna Group of Citizens (2015). Values based banking. UNEP Inquiry Working Paper. UNEP Inquiry/Institute for Social Banking/Finance Innovation Lab

Volz, U. (forthcoming). The Role of Central Banks in Enhancing Green Finance. UNEP Inquiry Working Paper. UNEP Inquiry.

Volz, U. (forthcoming). Effects of Financial System Size and Structure on the Real Economy: What Do We Know and What Don't We Know? Working Paper for UNEP Inquiry.

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