

# Scaling Up Sustainable Investment through Blockchain-based Project Bonds

**Yushi Chen**

University of Sussex

**Ulrich Volz**

SOAS, University of London & German Development Institute

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# Outline

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- Introduction
- Fintech solutions to enhance sustainable investment
- A proposal for a blockchain-based bond for sustainable investments
- Conclusion



# Introduction

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- Large-scale investment needed in sustainable infrastructure, incl. in renewable energy, to foster a low-carbon transition and align economies with the Paris Agreement & 2030 Agenda.
  - IMF (2020a) estimates the additional annual public investment needs in infrastructure, low-carbon technologies & other areas needed to achieve the SDGs at more than US\$20tn over the next two decades.
- Especially in developing and emerging economies, finance has been identified as a bottleneck.
- From billions to trillions?
  - Incentivising private capital from advanced countries to finance investment in developing and emerging economies has not been overly successful.
  - Limits to the role of foreign investment in financing infrastructure.
  - Financial vulnerability risks associated with foreign finance.



# Introduction

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- Importance of strengthening domestic resource mobilisation.
  - Significant amounts of developing and emerging economies' savings are invested in low-yielding assets in financial centres of advanced economies.
- Besides the mobilisation of finance, a central problem around infrastructure investment is corruption.
  - The IMF (2020b) estimates that “one-third of funds for public infrastructure is lost worldwide to inefficiencies.”
  - It is hence crucial to identify ways how this slack can be reduced if not eliminated.



# Introduction

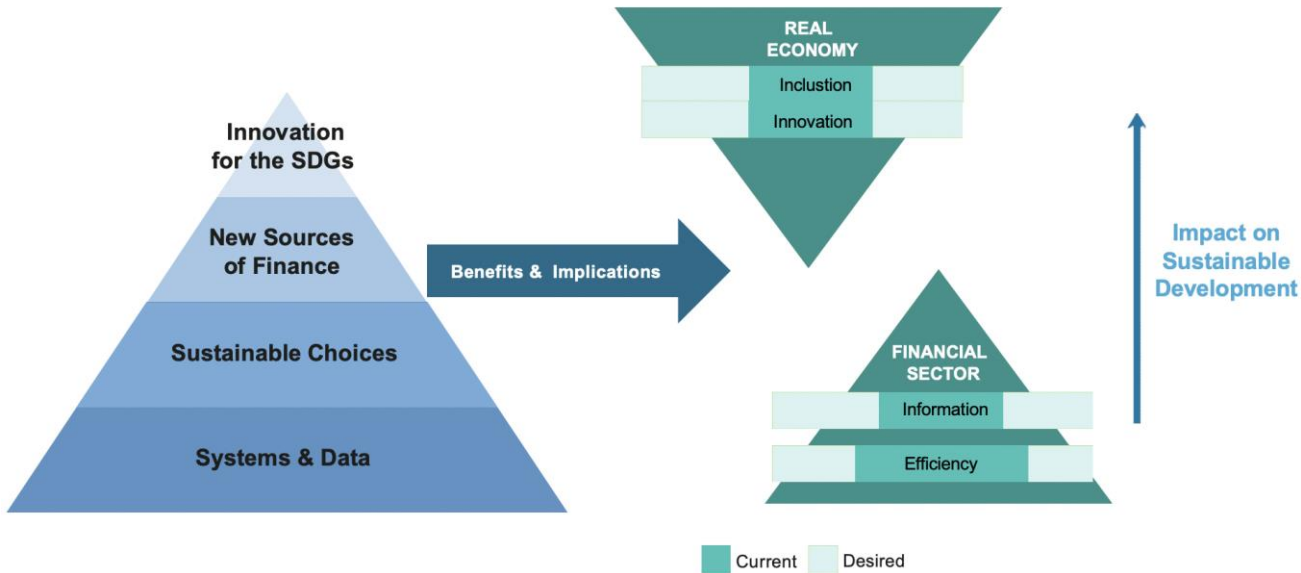
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- Against this backdrop, this paper discusses how fintech and blockchain-based solutions can facilitate domestic resource mobilisation for sustainable investments and at the same time improve the implementation of infrastructure projects throughout the entire life cycle by facilitating processes and enhancing transparency.
- In particular, this paper explores how fintech can help to complement conventional capital markets and help to mobilise financial resources for sustainable infrastructure investments.



# Fintech Solutions to Enhance Sustainable Investment

## Environmental data validation and flow



Compiled based on GDFA (2018).

- The Green Digital Finance Alliance identifies several challenges for connecting the financial sector with the real economy.
- Highlights potential of digital finance for improving information and efficiency in the financial sector through better systems and data, and for fostering inclusion and innovation in the real economy by broadening sustainability choices and providing new sources of finance.
- Digital finance can be developed to leverage the full potential of sustainable finance, by facilitating a better use of sustainability-related data for financial decision-making, and by supporting nascent business models by enabling better access to funding.



# Digital Finance

**Fintech or digital finance is a business approach dedicated to making financial services more efficient through internet-related technologies.**



The M-Akiba project

Treasury Mobile Direct (TMD)

Digital crowdfunding platforms

**& Blockchain**



# **A proposal for a blockchain-based bond for sustainable investments**

- How can we bring together different fintech approaches to mobilise local savings for sustainable infrastructure investment?
- How can we use digital technologies to meet the interest of the various stakeholders?





# A proposal for a blockchain-based bond for sustainable investments

## What are interests of the main stakeholders?

### **From a public policy perspective**

Investment in sustainable infrastructure to support local development

- Deliver and operate infrastructure utility at low cost, with reliable revenue stream

Favourable financing conditions

- Raise long-term project finance in domestic currency and avoid currency and maturity mismatches
- Low interest rates

Financial sector development and reduction of financial instability risk

- Strengthening domestic local currency bond markets
- Strengthen local investor base
- Broaden opportunities for domestic savings to be invested in safe assets

Strengthen accountability and “good governance”

- Strengthen transparency of use of proceeds and reduce corruption problems

### **From an investor perspective**

Investment opportunity into “safe assets” (i.e. low risk of default)

User-friendly investment process

Easy access, even for small amounts for retail investors

Aggregation small sized projects for institutional investor

Sustainability driven projects, capable for impact investors

### **From a local resident perspective**

Investment in sustainable infrastructure to support local development

Access to quality infrastructure services at low cost

No negative environmental externalities

Positive local employment effects

### **From a development agency perspective (if applicable)**

Support sustainable infrastructure development

Promote access to affordable energy, water etc.

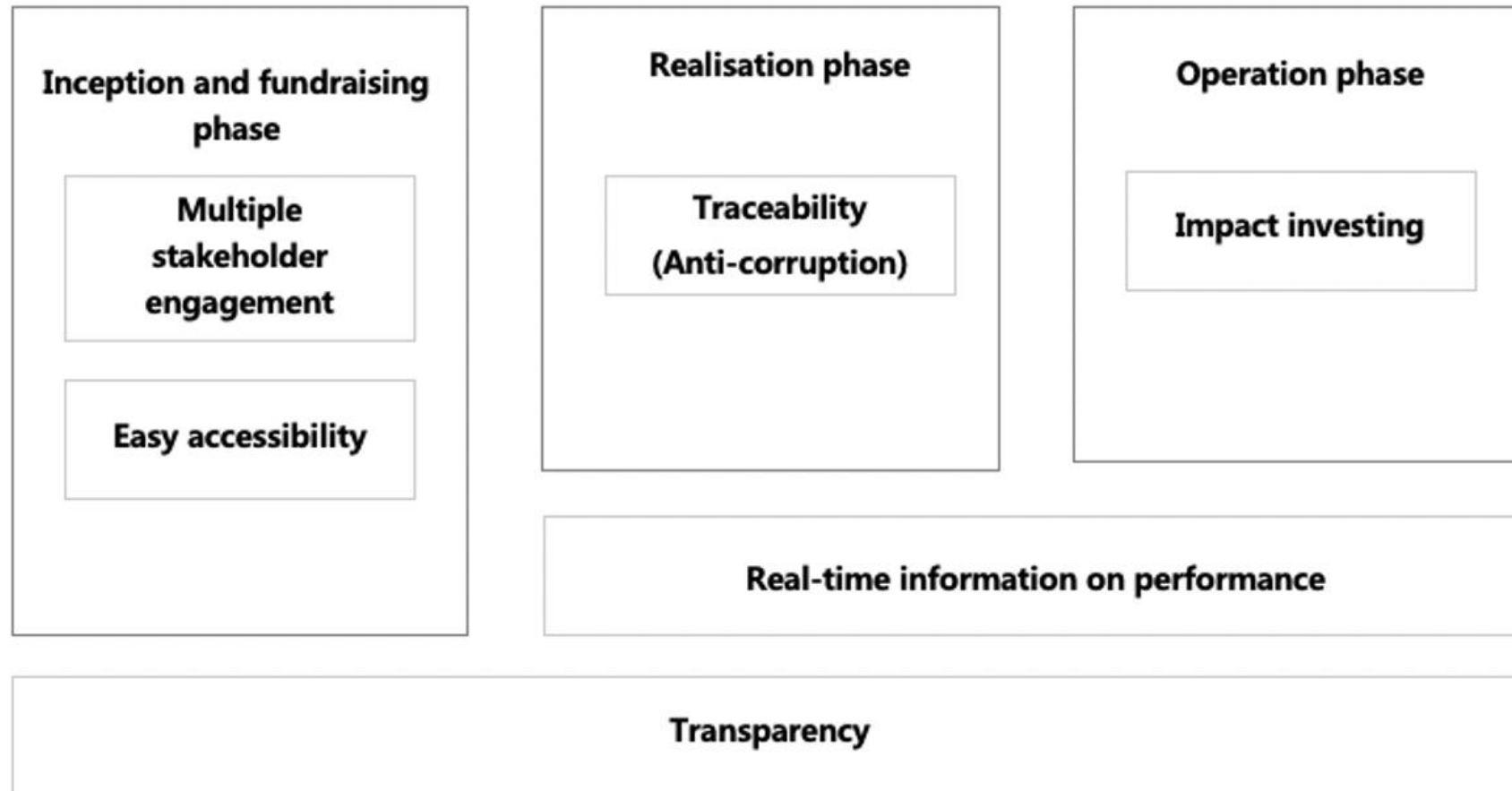
Promote “good governance”/anti-corruption efforts

Support domestic financial market development



# A proposal for a blockchain-based bond for sustainable investments

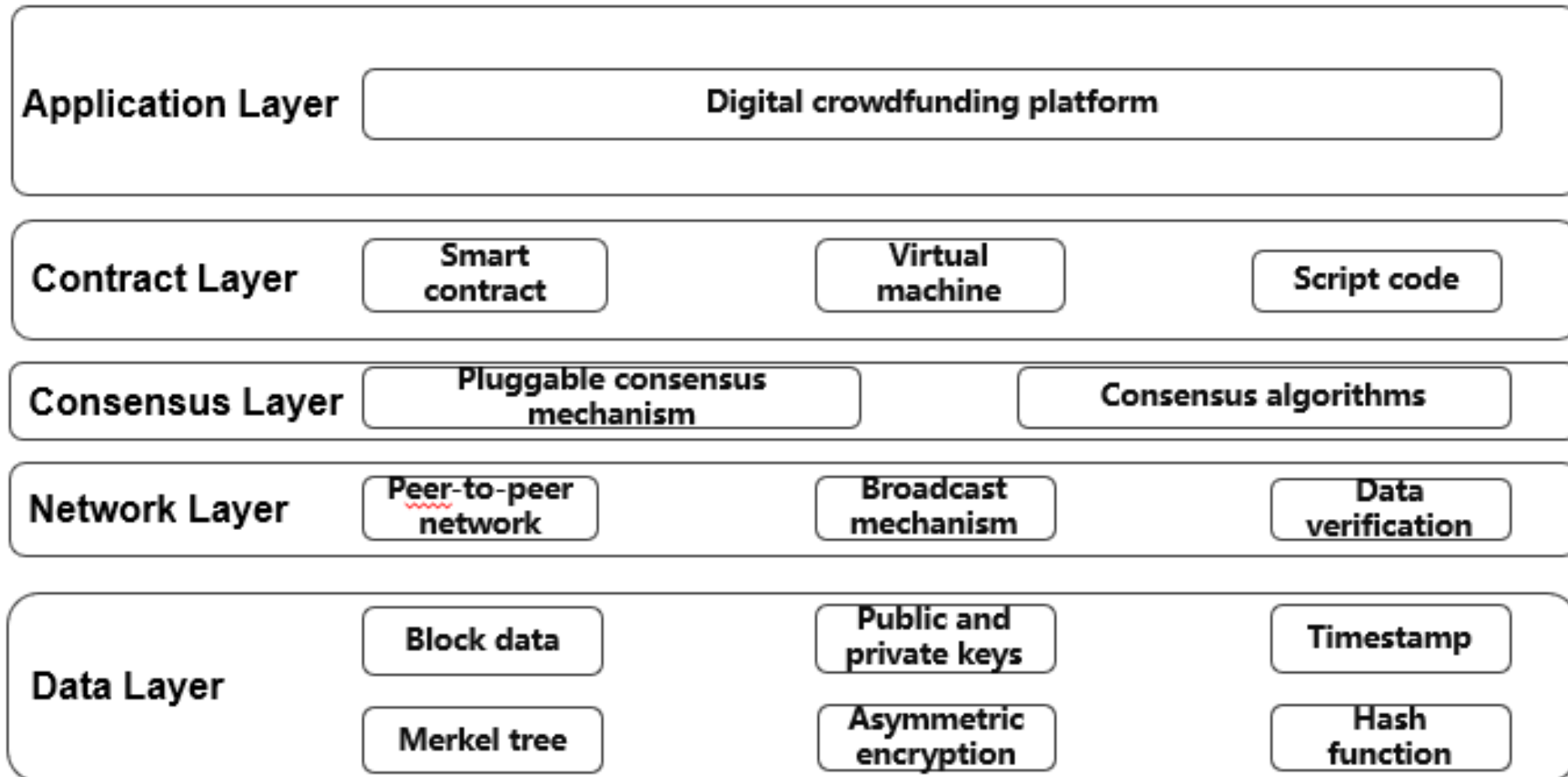
- Our proposal aims to address key concerns in the three key phases of an infrastructure project's life cycle.





# A proposal for a blockchain-based bond for sustainable investments

## Technical structure of the proposal





# A proposal for a blockchain-based bond for sustainable investments

- **Advantages:**
  - Allows to transparently record and certify the use of proceeds, sustainability impact and revenue streams of the project by combining timestamp, public and private key mechanism, and smart contract technologies.
  - Provides investors of different sizes the opportunity to purchase local-currency assets and issuers such as municipalities to raise funds for sustainable infrastructure investment.
  - Facilitates project management once the project is operational (e.g. through metering and billing).
  - Creates full transparency across the life cycle of the investment, reducing problems with mis-use of funds.



## Conclusion

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**In this paper, we explore how fintech can complement conventional capital markets and help to mobilise finance for sustainable infrastructure investments**

- Multiple applications to suit different situations would be possible, including community ownership structures, using the strength of a decentralised governance model backed by blockchain.
- To our knowledge, such an approach has not been implemented in practice yet.
- UN Secretary General's Task Force on Digital Financing of the SDGs has recently launched a Pathfinder Initiative with the government of Bangladesh to explore how to use digital technology to mobilise small amounts of domestic savings for sustainable infrastructure investment.
  - Envisages to transform micro savers to micro investors and reduce the need for international borrowing.



**Thanks!**