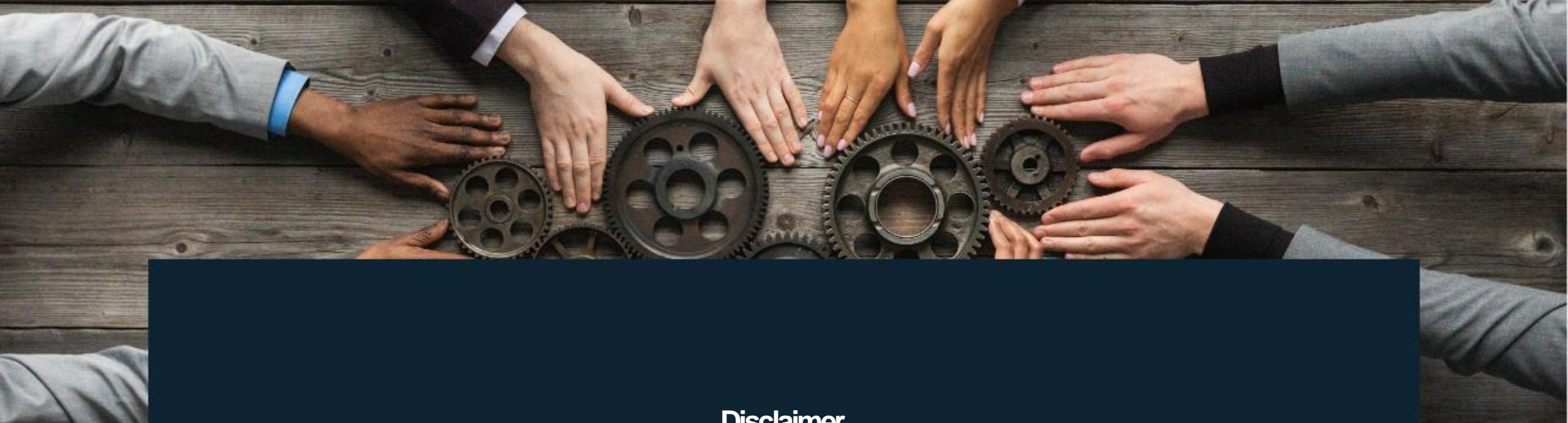# Green Fintech Market Review

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Disclaimer

Please note that the examples and institutions referenced throughout the green fintech session are for illustrative purposes only. The FSCA does not endorse, promote, or recommend any specific company, product, or service. The information presented is intended solely to facilitate understanding of the green fintech landscape and its potential impact on the financial sector. Any references to particular institutions or technologies are not an endorsement or a reflection of their compliance or suitability within the regulatory framework. The views and opinions expressed during this session are those of the panelists and do not necessarily reflect the official stance of the FSCA.
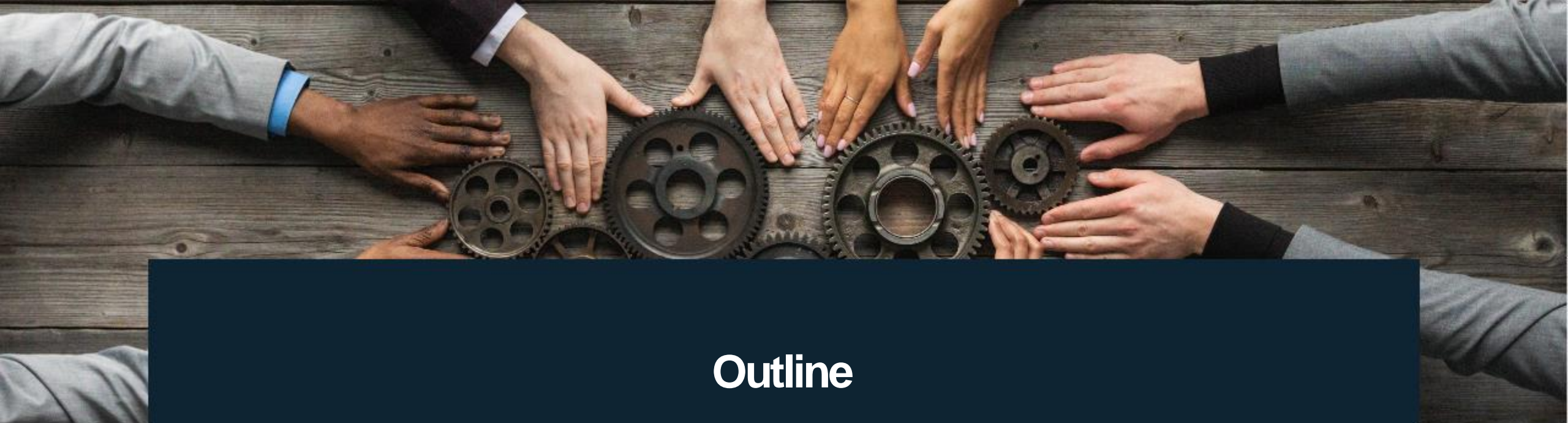
Outline

Green Fintech Introduction & Trends

Green Fintech Use Cases

Green Fintech Survey Insights

Implications for the Financial Sector

The global climate crisis

- The **global climate crisis** refers to the ongoing, large-scale changes in the earth's climate system, primarily driven by human activities such as burning fossil fuels, deforestation, and industrial processes.

- These activities release greenhouse gases into the atmosphere, trapping heat and leading to global warming.

- Ever more frequent and extreme climate impacts illustrate just how much is at stake as global average temperatures rapidly approach 1.5°C above pre-industrial levels.

- The latest estimates put the world on course for a temperature rise of 2.6-3.1°C this century unless there is urgent and ambitious mitigation.

- Green fintech has emerged as a powerful force at the intersection of the technology and environmental sustainability.


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What is Green Fintech?

Definition

"Green Fintech" is the combination of fintech solutions and environmental sustainability goals. The concept uses innovative financial technologies to manage environmental challenges and promote sustainable practices in the financial sector. This includes the development of digital tools and platforms aimed at facilitating green investments; encourage transparency in environmental reporting; and support environmentally friendly financial products and services.

Key technologies powering green fintech
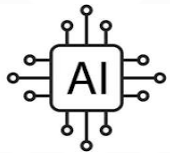
Artificial Intelligence & Machine learning
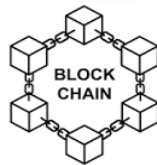
Blockchain & DLT

Big data & analytics

Cloud computing
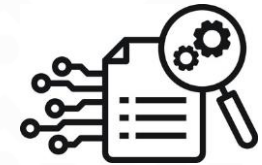
Internet of Things

Geospatial technology

Green fintech enabling factors

Technological advancements

Data availability and transparency

Policy & Regulatory support

Consumer demand for sustainable products

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Green fintech global trends

- The Global Green Finance Market Size was valued at **$4.18 Trillion in 2023** and is expected to reach **$28.71 Trillion by 2033**, reflecting a **CAGR of 21.25%** during the period.

- Investments in **green projects** are surging globally, with funding reaching **$495 Billion** in 2022**.** Fintech companies, through digital platforms play a pivotal role in facilitating these investments.

- The global **green fintech market** is anticipated to expand at a **CAGR of 22.4%** between 2024 and 2029.

Rapid growth in sustainable finance solutions	Government regulations driving adoption
•Financial institutions are increasingly developing products and services that emphasize the importance of environmental sustainability. •They include green loans, green bonds, and investment platforms focused on environmentally friendly projects. •This trend indicates a broader shift in the financial industry towards addressing climate change	•Many jurisdictions have made significant progress in integrating fintech innovation and technology into green finance to promote sustainable communities. •Governments and regulatory bodies are implementing policies to promote sustainable finance. •Initiatives such as the Paris Climate Agreement and COP29 are encouraging the development of green fintech solutions, providing a supportive framework for innovation in this space.

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Green fintech classification

Green digital payment and account solution

Payment and account solutions integrating green features into the payment experience.
Use cases:
- Automated carbon, plastic or water footprint accounting, based on transaction data.
- Automated offsetting of green externalities.

Green digital investment solutions

Digital platforms that provide automated solutions, algorithm driven green financial planning and investment services with little to no human supervision.
Use cases:
- Retail algorithmic trading with a focus on green assets.
- Automated green investment advice.
- Automated green portfolio allocation.

Digital ESG data and analytical solutions

Solutions for automated green data collection and analytics for finance, including automated green asset rating and indexing.
Use cases:
- Credit scoring algorithms that integrate green data in the credit decision.
- Automated ESG rating of companies & funds.
- Digital green indexing.

Green Digital Crowdfunding and syndication platforms

Digital platforms for capital raising from a large number of individuals or from institutional investors to finance new green business ventures or projects.
Use cases:
- Green equity crowdfunding.
- Green loan crowdfunding.

Green Digital risk analysis and insurtech

Solutions that help optimize green insurance products and services as well as solutions to minimize physical climate and nature-related risks.
Use cases:
- Automated risk evaluation and monitoring tools
- Digital green insurance
- Dynamic pricing and underwriting of green assets.

Green digital deposit and lending solutions

Digital savings solutions used to finance environmentally beneficial projects. Digital loans to finance projects or loans linked to green behaviors.
Use cases:
- Green digital loans
- Green linked or transition loans
- Green digital mortgages

Green digital asset solutions

Tokens and crypto currencies with green properties and blockchain capital market infrastructure built for green use cases.
Use cases:
- Green utility tokens as a reward for lowering carbon emissions.
- Green asset tokens, e.g. a tokenized carbon credit

Green Regtech/Suptech solutions

Applications of technology-enabled innovation for regulatory, compliance and reporting requirements implemented by a regulated institution or a financial supervisory authority.
Use cases:
- Using digital technology to analyse disclosed green and financial data to automatically calculate a green taxonomy alignment percentage of a financial product e.g. a fund.
- Processing capabilities of AI to automatically monitor the quality of green banking disclosures.

Source: Green Digital Finance Alliance

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Aim of the research

Problem statement

- The **global climate crisis**, driven by human activities like **fossil fuel consumption and deforestation**, has led **to significant climate disruptions**, including rising temperatures, shifting weather patterns, and ocean acidification. Among the emerging solutions, **green fintech has gained significant attention** as a transformative force at the intersection of technology and environmental sustainability. Despite the growing interest in green fintech, there is limited understanding of its current state in South Africa.

Purpose and objective

- This research aims explore South Africa's green fintech landscape, focusing on risks, benefits, drivers and implications to the financial sector.
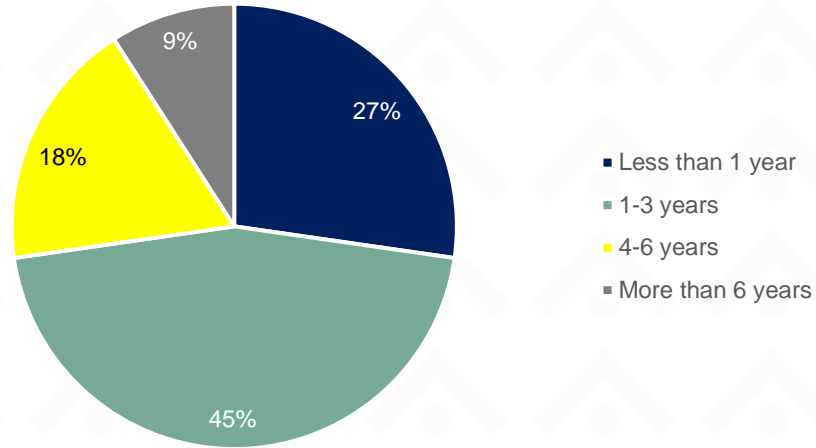
Research approach

- The study employed a missed methods approach.
  - Desktop research
  - Obtained data related to green fintech activities through an industry survey
 - Conducted in-depth interviews with selected participants

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Green fintech survey insights 1/6

Duration of green fintech initiative

Pie chart:
- 27% — Less than 1 year
- 45% — 1-3 years
- 18% — 4-6 years
- 9% — More than 6 years

Legend:
- Less than 1 year
- 1-3 years
- 4-6 years
- More than 6 years

Environmental impact

Bar chart categories (top to bottom):
- Very High Impact
- High Impact
- Moderate Impact
- Low Impact
- Minimum Impact

X-axis: 0%, 5%, 10%, 15%, 20%, 25%, 30%

- Most organizations have been active in green fintech for varying lengths, with notable clusters in **1-3 years** and **less than 1 year**.
- This statistic suggests that while green fintech is a relatively new field, a subset of institutions are experienced and committed to long-term environmental initiatives.
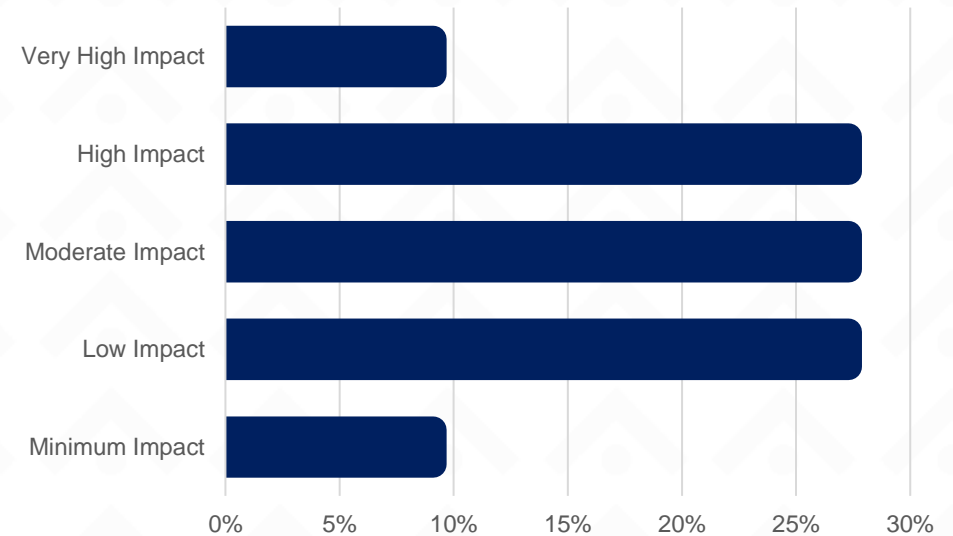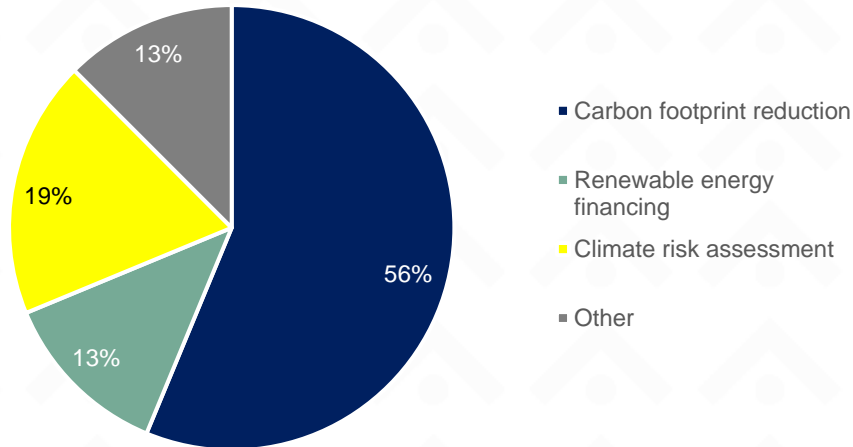
- The environmental impact of green fintech initiatives ranges from **Low Impact to Very High Impact, indicating mixed** outcomes.
- This could imply **varied success levels**, depending on initiative focus and implementation strategies.

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Green fintech survey insights 2/6

Primary focus of green fintech initiatives

Pie chart:
- Carbon footprint reduction: 56%
- Renewable energy financing: 13%
- Climate risk assessment: 19%
- Other: 13%

Legend:
- ■ Carbon footprint reduction
- ■ Renewable energy financing
- ■ Climate risk assessment
- ■ Other

Geographic scope

Pie chart:
- National (Across South Africa): 38%
- Regional (Across Southern Africa): 13%
- International: 50%

Legend:
- ■ National (Across South Africa)
- ■ Regional (Across Southern Africa)
- ■ International

- Carbon footprint reduction appears as a leading initiative focus.
- Renewable energy financing and climate risk assessment are also notable, indicating an alignment with **global trends in sustainable** finance and environmental responsibility.
- Institutions often selected multiple focus areas, suggesting a multi-faceted approach to green initiatives.
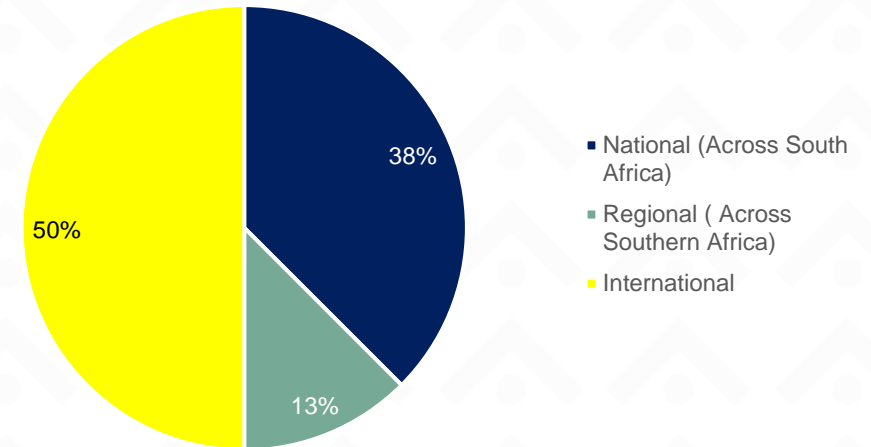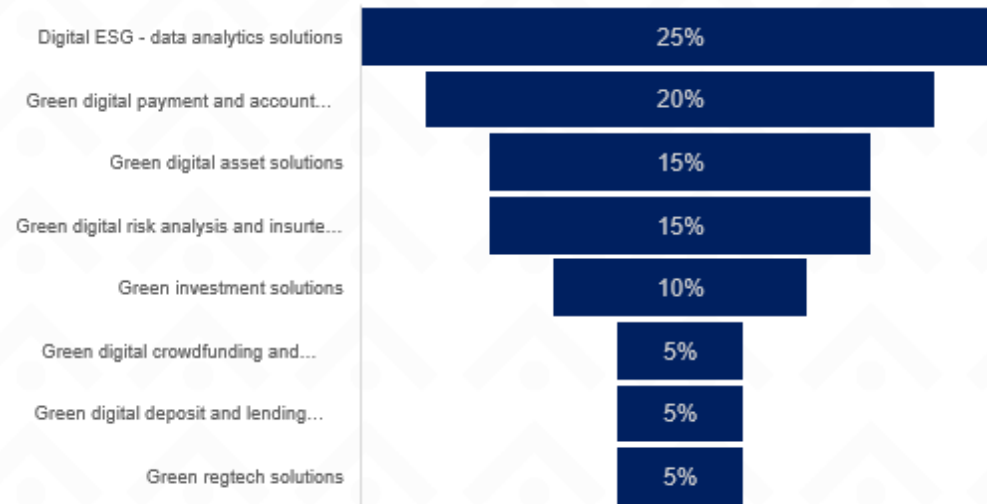
- A substantial portion of initiatives targets **international markets**, although there is significant activity at **national level within South Africa**.
- This finding indicates a strong interest in addressing **global environmental challenges** while still catering to South Africa-specific needs, such as carbon footprint reductions.
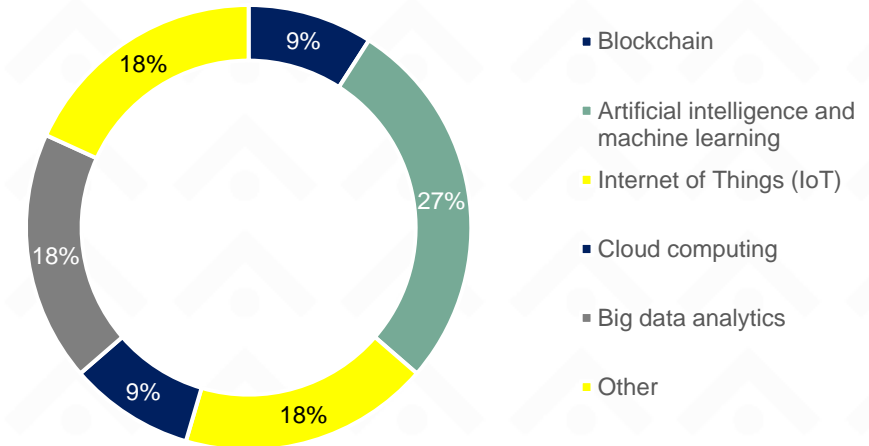
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Green fintech survey insights 3/6

Dominant green fintech segment

Segment	%
Digital ESG - data analytics solutions	25%
Green digital payment and account…	20%
Green digital asset solutions	15%
Green digital risk analysis and insurte…	15%
Green investment solutions	10%
Green digital crowdfunding and…	5%
Green digital deposit and lending…	5%
Green regtech solutions	5%

Technology supporting green fintech initiatives

Blockchain — 9%

Artificial intelligence and machine learning — 27%

Internet of Things (IoT) — 18%

Cloud computing — 9%

Big data analytics — 18%

Other — 18%

- **Digital ESG data analytics** (25%) and **Green digital payment and account solutions** (20%) had the highest response values
- **Green deposits & lending and Crowdfunding Solutions** (each at 5%) though less emphasized, these areas hold potential for supporting renewable energy and other socially beneficial initiatives.
- **Green Regtech/Suptech solution** also not emphasized but has the capacity to improve green compliance and supervision.
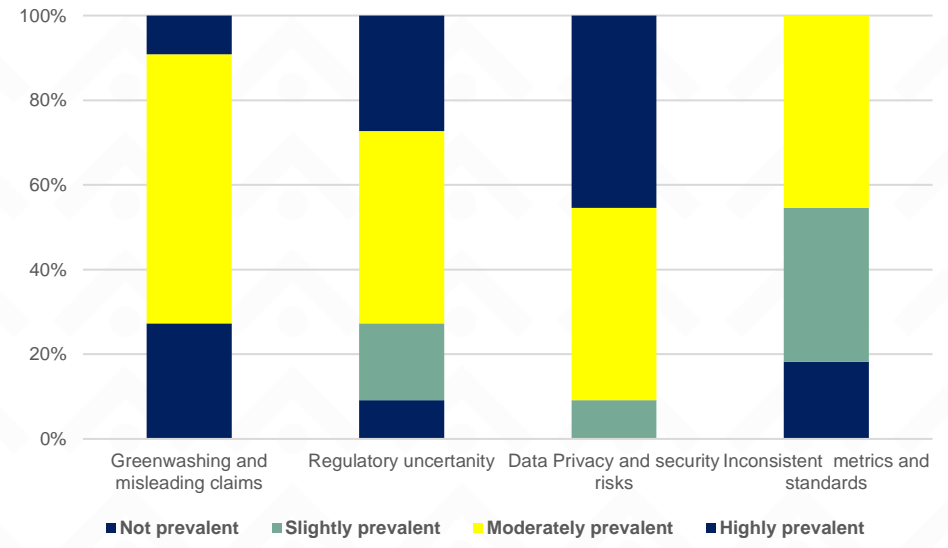
- Technologies in use include **big data analytics, artificial intelligence (AI), machine learning (ML)**, and **cloud computing**.
- The prevalence of **AI and ML** indicates a focus on sophisticated data analysis for environmental impact assessments and predictive modeling, while **big data** and **cloud computing** suggest that scalable, data-intensive approaches are key to these initiatives.

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Green fintech survey insights 4/6

Green fintech prevalent risks

Legend: **Not prevalent** | **Slightly prevalent** | **Moderately prevalent** | **Highly prevalent**

Green fintech benefits

- **Greenwashing:** *"Moderately prevalent"* suggesting that green fintech initiatives are gaining traction, but there is evidence of some companies exaggerating their environmental impact. This suggests a need for a need for *clearer regulatory definitions and standards* to differentiate genuine sustainable efforts
- **Regulatory uncertainty:** The prevalence of regulatory gaps and uncertainty varies across institutions, highlighting inconsistencies and ambiguities in regulatory framework. This uncertainty poses challenges for green fintech's, which may struggle with evolving regulations, unclear definitions, and the lack of standards specific to green initiatives.
- **Data privacy and cybersecurity:** Rate as *"Highly prevalent"* as many initiatives rely on advanced technology platforms. This prevalence underscores the importance of implementing robust data protection policies and regular risks assessments to protect consumer data and ensure ethical data usage.
- **Inconsistent metrics:** Rated "Moderate prevalence" posing significant challenge to the ecosystem. Unlike traditional finance, green fintech initiatives often lack universally accepted metrics for measuring environmental impact, leading to discrepancies in how companies define and report their green initiatives.
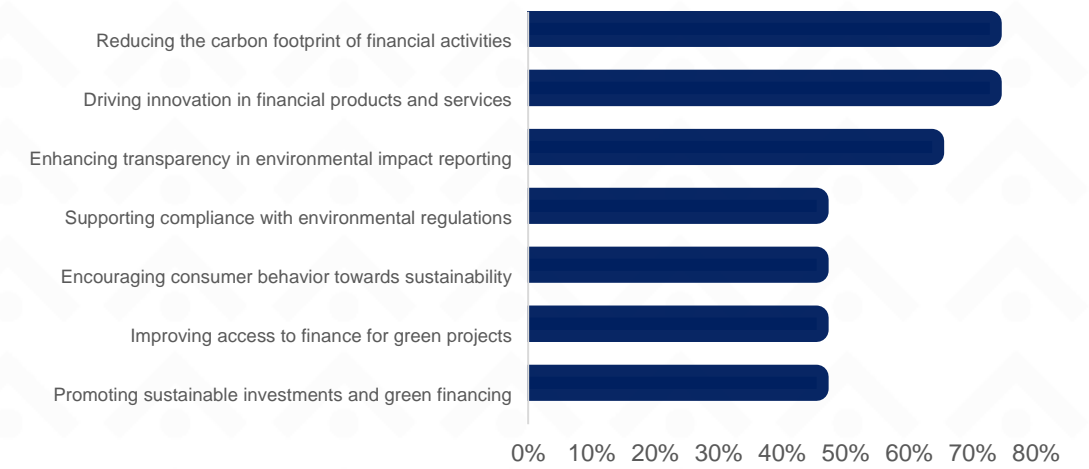
- **Carbon reduction:** The most emphasized benefit, highlighting the focus on minimizing the environmental impact. This aligns well with South Africa's sustainability goals, indicating a strong opportunity for green fintech solutions to support both regulatory compliance and environmental goals.
- **Driving innovation:** With the same score as reducing the carbon footprint, this reflects a strong recognition of how green fintech is not only addressing environmental goals but also spurring financial industry evolution in ways that benefit both providers and consumers.
- **Enhance transparency** and **improving access to finance for green projects:** These benefits are also notable, emphasizing the role of green fintech in improving transparency and advancing sustainable financial products.

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Green fintech survey insights 5/6

Green fintech drivers
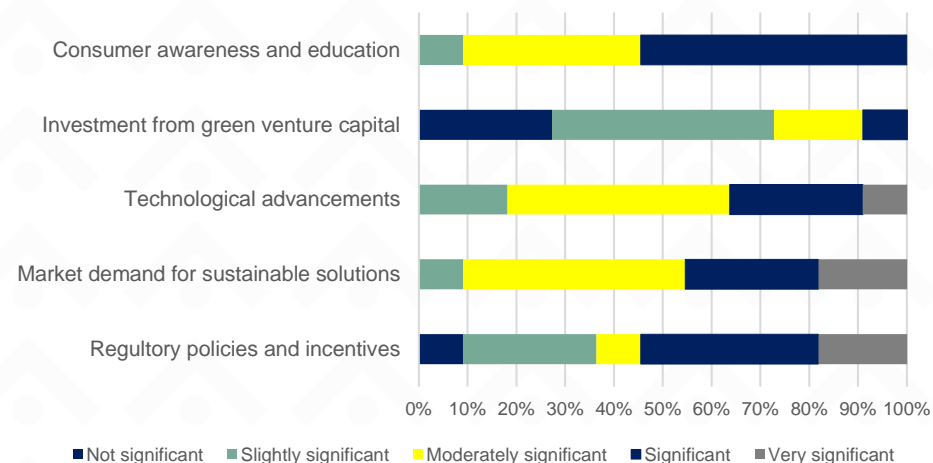
- **Regulatory policies and incentives:** Rated *"Significant"* aligning with the need for regulatory clarity and pivotal role regulation play in the adoption and success of green fintech while incentives such as tax breaks and subsidies further stimulates investments in the sector.
- **Market demand for sustainable solutions:** *"Moderately significant"* indicating a positive demand for sustainable solutions. However, market demand alone may not be enough to drive adoption without policies that promote sustainable options.
- **Technological advancements:** Rated "Moderately significant" suggesting that technology alone may not drive adoption without out other enabling factors like regulatory policy and investment.
- **Consumer awareness:** Rated primarily "Significant" suggesting it is an essential driver for the success and adoption of green fintech.

Challenges hindering growth of green fintech

- **Regulatory uncertainty:** While supportive policies can drive growth, regulatory uncertainty and lack of clear guidelines act as a barrier. As a relatively new field, unclear frameworks may create compliance challenges and deter innovation.
- **Limited market awareness:** Some consumers are still unaware of green fintech solutions and their benefits which may limit the sectors growth and slows adoption rates.
- **Lack of skilled talent:** The green fintech sector relies on specialized skills on areas like AI, big data and green finance, The lack of expertise in these areas may hinder the ability to innovate and scale effectively.
- **High technological cost:** Advanced technologies like AI-driven ESG analytics and blockchain for carbon trading are costly to develop and maintain, posing a barrier for green fintech, especially startups. Rapid tech evolution adds further financial strain, as companies must invest continuously to stay current.

Green fintech survey insights 6/6

- **Market size:** The green fintech market is perceived to have significant potential, with estimates spanning **more than R10 billion**, suggesting substantial growth and optimism in environment and financial return.

- **Growth perceptions:** Past 5 years green fintech is perceived to have **grown moderately**, reflecting a steady rise in green fintech adoption while, in the next 5 years there is more optimism for **significant growth.**

- **Risk mitigation:** There was a strong emphasis on **robust governance structures**, including dedicated teams and committees, transparent reporting, **using live data and impact models** to track and validate environmental outcomes and **active stakeholder engagement** to ensure products are relevant and ethically sound.

- **Lack of standardize metrics:** Varying metrics were identified as being used to measure the impact of green initiatives, suggesting that the sector lacks a unified approach to assessing environmental outcomes. This makes it difficult to compare and measure the impact across green fintech initiatives.

- **Regulatory priority:** Facilitating innovation was seen as the top regulatory priority, with participants expressing a need for regulation that promotes responsible innovation and developing clear guidelines and best practices for green fintech.

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Implication for the financial sector

Promote enabling policies and regulation

- To foster responsible innovation, there is a need for a regulatory environment that encourages participants to explore and implement green fintech solutions confidently.
- Establishing clear regulatory guidance and taxonomies can reduce uncertainty, empowering innovations without fearing regulatory repercussions and supporting the growth and adoption of green fintech solutions.

Drive awareness programs

- The limited market awareness of green fintech solutions has significant implications for the sector, affecting growth, adoption, and the overall impact these solutions can have on environmental sustainability.
- By proactively addressing limited market awareness, the financial sector can accelerate the adoption of green fintech solutions.

Opportunity to lead in green fintech

- Given the global climate crisis and the growth potential in the green fintech market, there is a unique opportunity for the financial sector to lead in both sustainability and innovation.
- By proactively embracing green fintech solutions, the sector can drive environmental progress while advancing cutting-edge financial technologies that meet the rising demand for green services.

Data privacy and cyber security

- Green fintech leverages data-driven technologies which rely on vast amounts of consumer and environmental data. This reliance increases the risks of data breaches, misuse, and unethical practices.
- To address these challenges, stakeholder should minimize the risks associated with data and cyber security ensuring data protection and privacy rights through appropriate legal frameworks.

Further work required

- Further work by relevant authorities and various stakeholders could offer the ability to better understand and explore how the sector can more proactively assess and respond to emerging risks and opportunities presented by green fintech.

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Thank you.