


# Chapter 10

## Green FinTech–Driving Sustainable Finance and Empowering Underserved Communities

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### ABSTRACT

*This chapter examines how financial technology is revolutionizing sustainability and financial inclusion. In order to tackle the twin issues of growing socio-economic inequality and climate change creative solutions are needed. Green finance technology which combines digital tools like blockchain AI and big data analytics with sustainable finance programs becomes a vital enabler. The transition to low-carbon economies is facilitated by Green FinTech which makes carbon markets transparent encourages green investments and supports ethical consumption as this chapter explores. Additionally, it emphasizes how these technologies can empower marginalized communities especially through access to financing for renewable energy inclusive banking models and microfinance platforms. Examples of effective Green FinTech applications show how they improve sustainability metrics and lower financial services barriers.*

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## INTRODUCTION

Financial technology or 'FinTech' which has received significant advancement over the last few years has revolutionized the global financial system, solving hitherto deemed solvable problems. Two critical issues of our generation are environmental conservation and economic accessibility to finance. Green FinTech is the subset of the broader FinTech field that directly addresses both of these important priorities through the development of advanced technological tools and a focus on sustainability and social justice. As a Green FinTech firm, Green FinTech aims at integrating novel solutions in technology to transform financial systems hence achieving a sustainable environment alongside offering financial solutions to the needy societies globally. This introduction conceptualizes Green FinTech for social innovation, critically assesses its transformative potential, and defines prospects and challenges connected with both equivocal topics (Banga & Arya, 2024). On the definition side, Green FinTech means applying the latest innovations in financial technology to solve problems related to the climate, resource utilization, and financial inclusion. In its essence, Green FinTech solves the environmental and social limitations of conventional FinTech services. While using blockchain, AI, Big data analytics, Green FinTech makes its products and services environmentally friendly by preventing carbon emission and financially inclusive by providing opportunities for excluded groups (Van Niekerk, 2024). It is easy to see that its environmental emphasis is reflected in designing systems that support carbon offset investment, allowing individuals and organizations to contribute directly to verified sustainability initiatives. In the same way, companies like SolarPayGo demonstrate good balance of both environmental and social goals offering off-grid communities the access to clean energy through pay-as-you-go solar systems, combined with flexible financing. Such innovations would therefore speak to the possibility of Green FinTech as an approach capable of making real changes to attaining better sustainable environment and enhance financial inclusion (Mhlanga, 2022). Environmentalism is of utmost importance in Green FinTech because the planet's climate desperately needs improvements. Institutionalized financial systems have in the past amplified the destruction of the planet through putting value on short term gains at the expense of long-term environmental gains such as deforestation, carbon emissions and loss of biodiversity. In order to overcome these shortcomings, Green FinTech targets to bring the financial flows in line with environmental objectives. For example, green bonds which are some forms of debt security used to finance environmental endeavours has in the recent past been popularised (Van Niekerk, 2024). Such organizations as ClimateTrade implement blockchain to increase trust in such transactions and guarantee that funds will be invested in truly sustainable projects. Also, using the Green FinTech facilitates increases the ability of organizations to align with their ESG standards.

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