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## USING CRYPTOCURRENCIES IN FINANCING SUSTAINABLE DEVELOPMENT GOAL PROJECTS: SWOT ANALYSIS

**Abstract.** *The interest and adoption of cryptocurrencies, such as Bitcoin and Ethereum, have significantly increased as a medium of payment and investment. At the same time, the international community has set a list of Sustainable Development Goals (SDGs) to be achieved by 2030, which includes eradicating poverty, protecting the planet, and ensuring peace and prosperity for everyone. One of the most significant challenges in achieving these SDGs is financing the necessary projects to implement them. Traditional financing sources, such as government budgets and private investments, may not be sufficient to cover the enormous costs associated with achieving the SDGs. Therefore, there is a need to explore alternative financing mechanisms to support the implementation of the SDGs. Cryptocurrencies represent a potential alternative source of funding for SDG projects. However, the lack of regulation and the high volatility of cryptocurrency prices may create uncertainty and risk for investors and project stakeholders. Examples of the use of cryptocurrencies in various SDG projects to enable fast and low-cost cross-border transactions are presented. The feasibility of using cryptocurrencies as a financing mechanism for SDG projects, a comprehensive SWOT analysis of the use of cryptocurrencies in financing SDG projects, potential problems and opportunities related to the use of cryptocurrencies for financing SDG projects, practical recommendations for policy makers, project developers and investors who are interested in using cryptocurrencies for financing SDG projects are discussed in the article. To address this issue, this article aims to conduct a SWOT analysis to evaluate the strengths, weaknesses, opportunities, and threats of using cryptocurrencies as a financing mechanism for SDG projects. The analysis will provide valuable insights into the potential benefits and drawbacks of utilizing cryptocurrencies for SDG project financing and identify strategies to mitigate risks and maximize opportunities. Ultimately, this research aims to contribute to the broader conversation around alternative financing mechanisms for sustainable development projects.*

**Key words:** cryptocurrencies, sustainability, Sustainable Development Goals, ecological economics, green economy, strategic management, decision-making, SWOT analysis.

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## ВИКОРИСТАННЯ КРИПТОВАЛЮТ У ФІНАНСУВАННІ ПРОЕКТІВ ДОСЯГНЕННЯ ЦІЛЕЙ СТАЛОГО РОЗВИТКУ: SWOT-АНАЛІЗ

**Анотація.** *Міжнародне співтовариство встановило перелік цілей сталого розвитку (ЦСР), які мають бути досягнуті до 2030 року, що включає викорінення бідності, сталий розвиток міст та громад, якісну освіту, захист планети, забезпечення миру та процвітання для всіх.*

Одним із найважливіших викликів у досягненні ЦСР є фінансування необхідних проектів для їх реалізації. Традиційних джерел фінансування, таких як державні бюджети та приватні інвестиції, може бути недостатньо для покриття величезних витрат, пов'язаних із досягненням ЦСР. Тому існує потреба вивчити альтернативні механізми фінансування для підтримки реалізації в. Криптовалюти є потенційним альтернативним джерелом фінансування проектів ЦСР. Інтерес до криптовалют, таких як біткойн та ефіріум, як засобів платежу та інвестицій, значно зріс. Однак відсутність регулювання та висока волатильність цін на криптовалюту можуть створити невизначеність і ризик для інвесторів і зацікавлених сторін проекту. Наведено приклади використання криптовалют у різних проектах ЦСР для здійснення швидких і недорогих транскордонних транзакцій: пілотний проект у Пакистані, який використовував блокчейн і криптовалюту для надання продовольчої допомоги понад 100 000 сирійських біженців; проект Brooklyn Microgrid у Нью-Йорку, який дозволяє власникам будинків із сонячними батареями продавати надлишок енергії сусідам за допомогою криптовалюти, платформу на основі блокчейну, яка дозволяє інвесторам фінансувати проекти відновлюваної енергетики в країнах, що розвиваються, за допомогою криптовалюти. Доцільність використання криптовалют як механізму фінансування проектів ЦСР, комплексний SWOT аналіз використання криптовалют у фінансуванні проектів ЦСР, потенційні проблеми та можливості, пов'язані з використанням криптовалют для фінансування проектів ЦСР, практичні рекомендації для політиків, розробників проектів та інвесторів, які зацікавлені у використанні криптовалют для фінансування проектів ЦСР, обговорюються в статті. Проведено SWOT-аналіз для оцінки сильних і слабких сторін, можливостей і загроз використання криптовалют як механізму фінансування проектів ЦСР. Проведений аналіз забезпечує цінну інформацію про потенційні переваги та недоліки використання криптовалют для фінансування проектів ЦСР і визначає стратегії управління можливими ризиками. Загалом, це дослідження має на меті сприяти ширшому обговоренню альтернативних механізмів фінансування проектів сталого розвитку.

**Ключові слова:** криптовалюти, сталість, цілі сталого розвитку, екологічна економіка, зелена економіка, стратегічне управління, прийняття рішень, SWOT-аналіз.

**Formulation of the problem.** In recent years, there has been a significant increase in interest and adoption of cryptocurrencies, such as Bitcoin and Ethereum, as a means of payment and investment. At the same time, the international community has set a list of Sustainable Development Goals (SDGs) to be achieved by 2030. These goals aim to end poverty, protect the planet, and ensure that all people enjoy peace and prosperity.

One of the biggest challenges in achieving the SDGs is financing the projects needed to implement them. Traditional sources of funding, such as government budgets and private investment, may not be enough to cover the enormous costs associated with achieving the SDGs. Therefore, it is essential to explore alternative sources of funding to support the implementation of the SDGs.

Cryptocurrencies represent a potential alternative source of funding for SDG projects. However, despite their growing popularity and potential benefits, cryptocurrencies are not without their challenges and risks. For example, the lack of regulation and the high volatility of

cryptocurrency prices can create uncertainty and risk for investors and project stakeholders.

Therefore, the objective of this article is to conduct a SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis of using cryptocurrencies as a financing mechanism for SDG projects. This analysis will provide insights into the potential benefits and drawbacks of using cryptocurrencies for SDG project financing and identify strategies to mitigate risks and maximize opportunities. Ultimately, this research aims to contribute to the broader conversation around alternative financing mechanisms for sustainable development projects.

**Analysis of recent research and publications.** The research and publications analyzed in this article reveal several important insights and approaches to the problem of using cryptocurrencies in financing sustainable development projects. Firstly, studies such as [1–3] highlight the potential benefits of blockchain technology and cryptocurrencies for achieving the UN's SDGs. These benefits include increased transparency, accountability, and efficiency in financial transactions, which

can help reduce corruption and improve the effectiveness of development funding.

Secondly, research such as [4; 5] explore specific use cases and examples of how cryptocurrencies can be used to fund sustainable development projects. These studies demonstrate the potential for cryptocurrencies to facilitate direct peer-to-peer funding, bypassing traditional intermediaries and reducing transaction costs. Additionally, they point out the importance of creating effective governance and regulatory frameworks to ensure the responsible and sustainable use of cryptocurrencies in development finance.

The experience of financing sustainable development projects in Ukraine considered at [6; 7].

However, despite the promising potential of cryptocurrencies for sustainable development, several challenges and limitations remain. These include the volatility and instability of cryptocurrency markets, the lack of widespread adoption and acceptance, and the potential for cryptocurrencies to exacerbate social and economic inequalities. Thus, while cryptocurrencies may offer new opportunities for financing sustainable development, there is a need for further research and exploration of their potential risks and limitations, as well as the development of appropriate governance and regulatory frameworks to ensure their responsible use.

**Setting the task.** The main objectives of this article are:

- evaluate the potential of using cryptocurrencies in financing Sustainable Development Goal (SDG) projects;
- conduct a SWOT analysis of the use of cryptocurrencies in SDG project financing;
- identify the challenges and opportunities associated with using cryptocurrencies in SDG project financing;
- provide recommendations for policymakers, project developers, and investors interested in using cryptocurrencies for SDG project financing.

**Summary of the main research material.** Cryptocurrencies have gained significant attention in recent years as an alternative form of currency and payment method. Unlike traditional currencies, cryptocurrencies are decentralized, meaning they are not controlled by a central authority such as a government or bank. The most well-known cryptocurrency is Bitcoin, which was introduced in 2009.

Cryptocurrencies are based on blockchain technology, which is a digital ledger that records transactions in a secure and transparent manner. Each transaction is verified and recorded by a network of computers, making it difficult to manipulate or corrupt.

One of the key features of cryptocurrencies is their anonymity. Transactions can be made without revealing personal information, making them attractive to those who value privacy. However, this anonymity has also made cryptocurrencies popular among criminals for illegal activities such as money laundering and drug trafficking.

Another important characteristic of cryptocurrencies is their volatility. The value of cryptocurrencies can fluctuate wildly and unpredictably, making them a risky investment. However, some proponents argue that cryptocurrencies offer a hedge against inflation and provide a more stable form of currency for countries with unstable economies.

Overall, cryptocurrencies have the potential to disrupt traditional financial systems and offer new opportunities for innovation and investment. However, their widespread adoption and acceptance as a legitimate form of currency and payment method still face regulatory and technical challenges.

The 2030 Agenda for Sustainable Development, adopted by the United Nations General Assembly in 2015, is a global plan of action for people, planet and prosperity, aimed at achieving sustainable development in all its dimensions. The Agenda includes 17 SDGs, which are a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity by 2030.

The 17 SDGs are interrelated and address various social, economic, and environmental problems, such as reducing poverty and hunger, improving education and health, promoting economic growth, reducing inequality, and addressing environmental sustainability and climate change. Additionally, the SDGs give importance to issues such as gender equality, access to clean water and sanitation, renewable energy, and building strong and inclusive institutions.

To achieve these goals, a set of 169 targets has been established to provide specific and measurable indicators of progress in areas such as education, health, employment, climate change, energy, and biodiversity. Although the SDGs

are not legally binding, they represent a shared responsibility among all stakeholders, including governments, private sectors, civil society, and individuals.

Furthermore, the SDGs are closely connected to other international agreements and frameworks, including the Sendai Framework for Disaster Risk Reduction and the Paris Agreement on climate change. Overall, the SDGs represent a comprehensive and ambitious framework for achieving sustainable development and building a more equitable and sustainable world for all.

In recent years, cryptocurrencies have gained significant attention in the financial world due to their potential to revolutionize traditional financial systems. However, the rise of cryptocurrencies also poses challenges for regulators and policymakers in terms of ensuring the safety and stability of the financial system. To address these challenges, international standards have been developed to regulate the use of cryptocurrencies in the financial sector.

One of the key international standards that govern the use of cryptocurrencies is the Financial Action Task Force (FATF) Recommendations. The FATF is an intergovernmental body that sets global standards for anti-money laundering and counter-terrorism financing policies. In 2019, the FATF updated its recommendations to include virtual assets and virtual asset service providers, which encompass cryptocurrency exchanges and other businesses involved in the transfer or exchange of cryptocurrencies.

In addition to the FATF Recommendations, other international organizations have developed standards and guidelines for the use of cryptocurrencies in the financial sector. For example, the International Organization for Standardization has developed a standard for blockchain and distributed ledger technologies, ISO/TC 307. This standard aims to provide a common language and framework for the development and implementation of blockchain and distributed ledger technologies, including those used for cryptocurrencies.

Another international organization that has developed standards for cryptocurrencies is the International Accounting Standards Board (IASB). The IASB has issued guidance on how to account for cryptocurrencies under International Financial Reporting Standards (IFRS). This guidance covers topics such as recognition, measurement, and disclosure of cryptocurrency holdings in financial statements.

Overall, the development of international standards for the use of cryptocurrencies in the financial sector is an important step towards ensuring the safety and stability of the financial system. While these standards provide guidance for regulators and businesses, there is still much work to be done in terms of harmonizing these standards and addressing new challenges that arise as the use of cryptocurrencies continues to evolve.

Cryptocurrencies have been used in various projects related to the SDGs to enable fast and low-cost cross-border transactions. For example, in 2017, the United Nations World Food Programme launched a pilot project in Pakistan that used blockchain and cryptocurrency to provide food assistance to more than 100,000 Syrian refugees. The pilot aimed to increase the efficiency, security, and transparency of the aid distribution process by allowing beneficiaries to purchase food from local merchants using cryptocurrency stored on their mobile phones.

Another example of the use of cryptocurrencies in SDG-related projects is in the renewable energy sector. In 2018, the Brooklyn Microgrid project in New York City implemented a blockchain-based peer-to-peer energy trading platform that allows homeowners with solar panels to sell their excess energy to their neighbors using cryptocurrency. This project aims to increase the adoption of renewable energy sources and reduce reliance on traditional energy providers, thus contributing to SDG 7: Affordable and Clean Energy.

Cryptocurrencies have also been used in impact investing to fund projects aimed at achieving the SDGs. For example, in 2018, ImpactPPA launched a blockchain-based platform that allows investors to fund renewable energy projects in developing countries using cryptocurrency. The platform aims to increase access to electricity in these countries while also providing investors with a transparent and secure way to invest in impact projects.

SWOT analysis is a strategic planning tool used to evaluate the strengths, weaknesses, opportunities, and threats of a business or project. The methodology involves identifying internal and external factors that affect the organization's ability to achieve its objectives.

The first step in conducting a SWOT analysis is to identify the strengths and weaknesses. Strengths are internal factors that give an advantage over its competitors, while weaknesses are internal factors that put the project at a disadvantage.

These can be identified through an analysis of the project's resources, capabilities, and current performance. The next step is to identify external factors that present opportunities or threats to the project. Opportunities are external factors that the project can exploit to its advantage, while threats are external factors that may negatively impact the project. These can be identified through an analysis of the market, industry, and competitive environment.

One of the key strengths of using cryptocurrencies for financing sustainable development projects related to the SDGs is the potential to attract a wider range of investors. Cryptocurrencies provide a decentralized and accessible platform for investment, which can help to overcome barriers such as geographical location, currency exchange rates, and traditional investment structures that often exclude smaller investors. This can enable a more diverse group of investors to participate in financing sustainable development projects, which can in turn help to drive progress towards the SDGs.

Another strength is the potential for increased transparency and accountability. Cryptocurrencies operate on a blockchain, which is a decentralized and transparent ledger that records all transactions. This can provide greater visibility into the use of funds, which can help to build trust among investors and stakeholders. Additionally, smart contract technology can be used to automate project management and ensure that funds are used for their intended purpose, which can further increase transparency and reduce the risk of fraud or mismanagement.

One more advantage of using cryptocurrencies for sustainable development financing is the potential for increased efficiency and reduced costs. Traditional financing methods often involve lengthy and costly processes, such as due diligence, legal fees, and administrative overhead. Cryptocurrencies can streamline these processes and reduce costs by eliminating intermediaries and automating key tasks. This can free up resources for project implementation and reduce the overall financial burden of sustainable development financing.

Finally, the use of cryptocurrencies for sustainable development financing can also contribute to the development of a more sustainable financial system. Cryptocurrencies are often seen as a disruptor to traditional financial systems, which are often criticized for their lack of transparency, accountability,

and social responsibility. By promoting more sustainable and responsible investment practices, cryptocurrencies can help to shift the financial system towards a more sustainable and equitable future.

Overall, the use of cryptocurrencies for financing sustainable development projects related to the SDGs has the potential to offer several significant advantages. From attracting a wider range of investors to increasing transparency and accountability, reducing costs and improving efficiency, and promoting a more sustainable financial system, cryptocurrencies can help to accelerate progress towards the SDGs and create a more sustainable future for all.

Despite the advantages of using cryptocurrencies in financing sustainable development projects, there are also some weaknesses and challenges that need to be considered. One of the main weaknesses is the lack of regulatory frameworks and clear guidelines for using cryptocurrencies in a sustainable and responsible manner. This can lead to potential risks and vulnerabilities, such as money laundering, terrorism financing, and tax evasion.

Moreover, the high volatility of cryptocurrency prices can pose a challenge for financing sustainable development projects, as it can affect the value of investments and make it difficult to predict the returns on investment. In addition, the limited acceptance and adoption of cryptocurrencies by mainstream financial institutions and investors can also hinder their use in financing sustainable development projects.

Another weakness is the potential negative environmental impact of cryptocurrency mining, which requires massive amounts of energy and generates significant carbon emissions. This is a significant concern given the urgent need to address climate change and achieve the environmental targets set forth in the SDGs.

Lastly, the lack of awareness and understanding of cryptocurrencies among the general public, policymakers, and investors can also be a challenge for their use in financing sustainable development projects. This can lead to misconceptions and mistrust, and may hinder the development of effective and responsible use of cryptocurrencies in sustainable finance.

Cryptocurrencies have the potential to play a significant role in financing sustainable development projects related to the 2030 Agenda. One major advantage of using cryptocurrencies

for financing is their ability to facilitate cross-border transactions without the need for intermediaries such as banks. This can make transactions more efficient and cost-effective, particularly in regions with limited access to traditional financial services.

Another advantage is the potential for greater transparency and accountability in financing. Blockchain technology, which underpins most cryptocurrencies, enables secure and tamper-proof record-keeping of transactions. This can provide increased transparency and accountability, which is particularly important for ensuring that funds are being used appropriately and for the intended purpose.

Cryptocurrencies can also enable greater participation in financing sustainable development projects by a wider range of stakeholders, including individuals and organizations who may not have had access to traditional financing channels. This can help to mobilize a greater pool of resources and promote a more inclusive approach to financing sustainable development.

Finally, cryptocurrencies can help to address some of the challenges associated with traditional financing mechanisms, such as the high costs of borrowing and the volatility of currencies

in certain regions. Cryptocurrencies may offer more stable and predictable financing options, which can help to promote greater stability and sustainability in the long term.

Overall, the use of cryptocurrencies in financing sustainable development projects presents a range of opportunities for promoting greater efficiency, transparency, participation, and stability in financing. However, these opportunities must be balanced against the potential risks and challenges associated with cryptocurrencies, including regulatory and legal issues, volatility, and cybersecurity concerns.

The use of cryptocurrencies in financing projects related to the SDGs also poses several threats. One of the major concerns is the lack of regulation and oversight in the cryptocurrency market, which makes it vulnerable to fraud, scams, and money laundering. Since cryptocurrencies are decentralized and operate outside traditional financial institutions, they are difficult to track and regulate.

Additionally, the anonymity and lack of transparency associated with cryptocurrencies can make it easier for terrorists and criminals to finance illegal activities. Cryptocurrencies can also be used to evade taxes and regulations,

Table 1

**SWOT analysis for using cryptocurrencies in financing SDGs projects**

| <b>Strengths</b>  | <b>Weaknesses</b>  |
|---|--|
| Wider range of investors, which helps to finance sustainable development projects related to SDGs                       | Lack of regulatory frameworks and clear guidelines for using cryptocurrencies in projects related to SDGs                                  |
| Increasing transparency and accountability through their use of blockchain and smart contract technology                | High volatility of cryptocurrency prices, which can affect the value of investments and make it difficult to predict returns on investment |
| Increasing efficiency and reduced costs for sustainable development financing compared to traditional financing methods | Limited acceptance and adoption of cryptocurrencies by mainstream financial institutions and investors                                     |
| Contributing the development of a more sustainable and equitable financial system                                       | Potential negative environmental impact of cryptocurrency mining   |
| <b>Opportunities</b>  | <b>Threats</b>   |
| Facilitation of cross-border transactions without intermediaries like banks   | Lack of regulation and oversight in the cryptocurrency market  |
| Potential for greater transparency and accountability through blockchain technology                                     | Security risks such as hacking and theft   |
| Greater participation in financing sustainable development projects by a wider range of stakeholders                    | High volatility and unpredictability of the cryptocurrency market  |
| Potential to address challenges associated with traditional financing mechanisms  | The energy-intensive process of cryptocurrency mining and transaction processing has significant environmental impacts                     |

*Source: compiled by the author*

posing a threat to the overall stability and integrity of the financial system.

Another concern is the high volatility and unpredictability of the cryptocurrency market, which can result in significant financial losses for investors. Cryptocurrency prices are subject to rapid fluctuations and are often driven by speculation and hype rather than fundamental factors.

Finally, the energy-intensive process of cryptocurrency mining and transaction processing has significant environmental impacts. The vast amount of energy required to power the cryptocurrency network contributes to greenhouse gas emissions and exacerbates the problem of climate change.

Overall, while the use of cryptocurrencies in financing SDG-related projects presents some opportunities, it also carries significant risks and challenges that must be carefully considered and managed.

**Conclusions and prospects for further research in this area.** The use of cryptocurrencies in funding projects related to the SDGs can bring several benefits. First, the decentralized nature of cryptocurrencies allows for more efficient and secure transactions, without the need for intermediaries such as banks. This can potentially reduce transaction costs and increase transparency in the funding process.

Second, the use of cryptocurrencies can attract a wider range of investors, including those who are more comfortable with the technology and ideology behind cryptocurrencies. This can help diversify the funding sources and increase the overall amount of funds available for SDG-related projects.

Third, the anonymity and privacy features of some cryptocurrencies can provide additional protection for investors, particularly in countries where political instability or corruption is a concern. This can encourage more investment in projects that have the potential to positively impact society but may carry a higher level of risk.

Finally, the use of cryptocurrencies can facilitate cross-border transactions, making it

easier for investors from different countries to participate in funding SDG-related projects. This can help promote international cooperation and increase the chances of achieving the SDGs on a global scale.

Overall, the use of cryptocurrencies in funding projects related to the SDGs can provide several advantages, including efficiency, transparency, increased funding sources, privacy protection, and international cooperation. As such, it is worth exploring this option as a means of achieving the SDGs by 2030.

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