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Content

The ethics of cryptocurrencies: between financial freedom and social responsibility

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Abstract

This article provides an interdisciplinary ethical analysis of cryptocurrencies, positioning them as a complex socio-cultural and technological phenomenon that transcends traditional finance. By bridging the gap between moral philosophy, economics, law, and social theology, the study explores the fundamental tension between the promise of financial freedom and the necessity of social responsibility.

The analysis evaluates three research hypotheses focusing on the emergence of moral risks, the role of institutions in mitigating inequality, and the potential of cryptocurrencies to serve the common good. Using the philosophical frameworks of Aristotle, Kant, and Rawls, the text examines critical issues such as transaction anonymity, the environmental impact of proof-of-work mechanisms, and the paradox of centralized power within decentralized systems. Furthermore, it addresses the regulatory landscape, specifically the EU's MiCA regulation, and contrasts the use of crypto-assets in developed versus developing economies.

The study concludes that while cryptocurrencies offer significant potential for financial inclusion and individual autonomy, they can only be ethically integrated into the global system if governed by a new paradigm of transparency, solidarity, and environmental care. Ultimately, the article argues for a shift from a purely economic profit logic to an ethical framework rooted in justice and the common good.

Keywords: Cryptocurrency Ethics, Financial Freedom, Social Justice, Common Good, Environmental Responsibility.

Introduction

Since Satoshi Nakamoto published his manifesto Bitcoin: A Peer-to-Peer Electronic Cash System (Nakamoto 2008) in 2008, cryptocurrencies have become one of the most discussed technological and economic phenomena of the 21st century. This phenomenon extends beyond the sphere of finance, entering the fields of law, philosophy, sociology, and social theology. For some, cryptocurrencies are a promise of economic emancipation, freedom from state and central bank control; for others, they are a source of risk: destabilization of monetary systems, speculation, and growing inequalities (Golumbia 2016; Prasad 2021).

Previous research on cryptocurrencies has focused mainly on their technological and economic aspects (Narayanan et al. 2016; De Filippi & Wright 2018), with less systematic attention paid to ethical issues. There are studies on the risks associated with money laundering and the financing of criminal activities (Foley, Karlsen & Putniņš 2019), as well as studies on their environmental impact (Stoll, Klaaßen & Gallersdörfer 2019; de Vries 2022). However, there is a lack of a synthetic approach that would combine philosophical, legal, economic, and social analysis in the context of fundamental questions about the common good.

The aim of this article is to highlight the tension between financial freedom and social responsibility in the world of cryptocurrencies. The analysis is interdisciplinary, covering:

- moral philosophy (Aristotle, Kant, Rawls, MacIntyre),
- economics and finance (Keynes, Hayek, Prasad),
- social sciences and law (Weber, De Filippi & Wright, BIS, EU regulations),
- social theology (John Paul II, Benedict XVI, Francis).

I formulate three research hypotheses:

- H1: The financial freedom offered by cryptocurrencies inevitably gives rise to new forms of moral risk and social inequality.
- H2: Institutions—states, stock exchanges, international organizations—can mitigate these risks, but they require a new ethical paradigm based on transparency and solidarity.

- H3: Cryptocurrencies can become a tool for promoting the common good only if they are incorporated into an ethical framework that includes care for the most vulnerable and environmental responsibility.

The article is based on a critical analysis of the literature on the subject, combining philosophical, economic, and legal sources. I use both classical texts (e.g., Aristotle's *Nicomachean Ethics*; Rawls' A *Theory of Justice)* and contemporary studies (De Filippi & Wright 2018; Prasad 2021). The analysis is normative and diagnostic in nature: the aim is not merely to describe the phenomenon of cryptocurrencies, but to attempt to answer the question of what ethical framework should shape their presence in the world of finance and society.

What is new about this study is the systematic combination of technological, ethical, and social perspectives. The article does not limit itself to the question of "whether cryptocurrencies are good or bad," but explores how they can be ethically integrated into the global economic system.

Cryptocurrencies as a technological and social phenomenon

Cryptocurrencies should be understood not only as financial tools, but also as a complex socio-cultural phenomenon. At their inception, they were closely linked to the ideas of the cypherpunk movement, which developed in the 1980s and 1990s. David Chaum had already proposed a payment system that would ensure complete anonymity for transaction participants, which was intended to counterbalance growing state and corporate surveillance (Chaum 1985: 1030-1034). Timothy C. May, in his *Crypto Anarchist Manifesto* (1992), presented a vision of a world in which cryptography would become the basis of a new social order, free from institutional control.

Bitcoin—designed as a decentralized distributed ledger system—was the practical embodiment of these ideas. The use of blockchain technology allowed trust to be transferred from state and banking institutions to a mathematical consensus algorithm. As Maurer, Nelms, and Swartz (2013: 262-265) note, Bitcoin is not only a medium of exchange, but also a performative social experiment, testing the limits of what money can be and what kind of community can form around it.

This phenomenon should be seen in the broader context of a networked society, in which digital technologies are redefining not only the economy but also social relations. Golumbia (2016: 53-59) points out that cryptocurrency narratives combine elements of free-market libertarianism, techno-anarchism, and distrust of state institutions. This ideological mix makes cryptocurrencies not only financial instruments, but also a kind of cultural project in which technology becomes a vehicle for political ideas.

From the perspective of social theory, cryptocurrencies can be interpreted as an example of what Manuel Castells referred to as the "new morphology of society" (*The Rise of the Network Society*, 1996). Relationships in the blockchain ecosystem—between miners, developers, investors, and users—are not hierarchical but networked, based on participation and the continuous flow of information. However, as BIS research (2018: 91-94) points out, the promise of decentralization often proves illusory: in practice, a few exchanges and mining groups dominate, leading to a concentration of power.

Cryptocurrencies have also become a social phenomenon in a symbolic sense. Terms such as hodl, to the moon, and diamond hands function as elements of community language, as do the rituals of participation in forums and social media. These practices—seemingly trivial—point to the emergence of new forms of collective identity associated with participation in digital markets.

Ultimately, cryptocurrencies should be treated as a hybrid: a technological innovation, an ideological movement, and a social practice. This combination means that ethical analysis cannot be limited to financial categories. Reflection is needed on their role in shaping values, social structures, and new forms of participation in public life.

Financial freedom and decentralization – idea and practice

One of the central slogans of the cryptocurrency narrative is financial freedom. The manifestos of the cypherpunk movement and the early discussions around Bitcoin express the belief that the traditional monetary system based on central banks and intermediary institutions limits individual autonomy. As Hayek wrote in Denationalisation of Money (1976: 22-29), the state's monopoly on money issuance encourages abuse and inflation, and free currency competition could restore a just economic order. Cryptocurrencies, in a sense,

fulfill this postulate by creating an alternative system in which users can make transactions without the intermediation of state institutions.

In this context, financial freedom primarily means the ability to freely dispose of one's own resources and protect one's privacy. The cryptographic mechanisms used in blockchain ensure the pseudonymity of transactions, and the lack of a central administrator eliminates the risk of arbitrary censorship. As Berlin (1991: 37-39) emphasizes, negative freedom consists in the absence of external restrictions – in the world of cryptocurrencies, this manifests itself in the absence of the need to use banking services or comply with the state's monetary policy.

However, as Rawls (1971: 243-246) notes, freedom must be linked to the principle of justice. In practice, the decentralization of cryptocurrencies does not always mean greater equality. Research by the BIS (2018: 96-99) shows that most cryptocurrency transactions and resources are concentrated in the hands of a small group of investors and exchanges. This creates a paradox: a tool designed to be decentralized creates new centers of power, often less transparent than traditional institutions.

MacIntyre (2007: 187-192) pointed out that individual freedom only makes sense within social practices rooted in the community. In the case of cryptocurrencies, the question arises: does financial freedom become an illusion if its realization means the risk of losing funds as a result of a hacker attack, speculation, or stock market fraud? Freedom detached from responsibility—both individual and institutional—leads to anarchy, not emancipation.

The practical dimension of financial freedom is particularly evident in countries where the banking system is unstable or repressive. The examples of Venezuela and Nigeria show that cryptocurrencies can serve as a tool for protecting assets in crisis situations (Prasad 2021: 187-191). At the same time, in countries with stable financial institutions, cryptocurrencies more often function as an object of speculation than as a real alternative to fiat money.

Decentralization, which is the foundation of the blockchain idea, faces practical limitations due to technical and economic constraints. The proof-of-work system requires significant energy and specialized equipment, which leads to the concentration of computing power in large mining farms. Alternative mechanisms, such as proof-of-stake, promoted by Buterin

(2022: 77-84), among others, are an attempt to reconcile decentralization with greater efficiency and sustainability.

Financial freedom and decentralization, while attractive in theory, reveal their ambivalence in practice. On the one hand, they open up space for individual autonomy and emancipation; on the other, without ethical and regulatory frameworks, they can lead to new forms of inequality, exploitation, and exclusion.

Ethical risks: anonymity, fraud, crime

Anonymity, one of the most frequently highlighted advantages of cryptocurrencies, has a dual ethical dimension. On the one hand, it protects individual privacy, a fundamental value in a democratic society. On the other hand, however, it creates space for criminal activities, from money laundering to financing drug trafficking and terrorism**.** As Foley, Karlsen, and Putniņš (2019: 1802-1805) have shown, a significant percentage of early Bitcoin transactions were linked to illegal markets, such as the infamous Silk Road.

The ethical problem, therefore, is the ambivalence of technology: a tool of emancipation can also be a tool of destruction. Kant (1785/2011: 53-56) emphasized in his Groundwork of the Metaphysics of Morals that the autonomy of the individual must always be subordinated to the principle of universal moral law. If anonymity serves to protect dignity and freedom, it is ethically positive; if, on the other hand, it becomes a mechanism for masking exploitation and violence, it leads to a distortion of the very idea of freedom.

Investment and speculative frauds pose an additional risk. Due to their decentralized nature, cryptocurrencies often operate outside the supervision of public institutions. This has led to a proliferation of pyramid schemes and fraudulent ICOs (Initial Coin Offerings). As Keynes (1936/2007: 157-160) notes, financial markets have a natural tendency toward irrational collective behavior. In the world of cryptocurrencies, this effect is exacerbated by the lack of regulation and the mass dynamics of social media.

Rawls (1971: 302-307) emphasized that social institutions must be designed to protect the weakest participants. In practice, however, the victims of crypto fraud are most often small investors who do not have sufficient technological and financial knowledge. Responsibility

therefore falls not only on individuals, but also on cryptocurrency exchanges, which should be guided by the principles of transparency and due diligence.

The ethical risk associated with cryptocurrencies also concerns their potential use in terrorist financing. A UN report (2019: 214-219) indicates that criminal and terrorist groups are experimenting with cryptocurrencies as a means of circumventing financial control systems. Although the scale of this phenomenon is smaller than media narratives suggest, this problem reveals the limits of the concept of financial freedom: absolute freedom can be conducive to the destruction of the common good.

The perspective of virtue philosophy, developed by Aristotle in Nicomachean Ethics (2011: 112-116), indicates that the proper use of financial tools requires the development of prudence (phronesis). Technology itself is neither good nor bad—it is only given an ethical dimension by social practice, in which participants are guided by specific values. Anonymity, speculation, and crime are symptoms of a lack of prudence and the virtue of moderation in the world of cryptocurrencies.

In summary, the ethical risks of cryptocurrencies stem from the tension between individual freedom and social responsibility. Privacy protection and financial autonomy can be positive values if they are balanced by mechanisms of transparency, investor education, and institutional accountability. Without this, freedom becomes fertile ground for chaos and destruction.

Economic and regulatory dimensions

Cryptocurrencies are significantly changing the economic landscape by challenging the traditional functions of money. According to the classic definition, money has three basic roles: a medium of exchange, a measure of value, and a store of value (Keynes 1936/2007: 45-49). In practice, however, most cryptocurrencies do not fully fulfill these functions. As a medium of exchange, they are ineffective due to their high volatility; as a store of value, they are unstable; and as a unit of account, they are speculative and risky.

The BIS report (2018: 95-101) points out that although cryptocurrencies have provided innovation in payment technology, in their current form they cannot compete with fiat currencies as common means of payment. Prasad (2021: 147-153), on the other hand,

emphasizes that their significance lies more in their transformative impact on finance—they pave the way for the development of central bank digital currencies (CBDCs) and new forms of market regulation.

The regulatory dimension of cryptocurrencies remains the subject of intense debate. In US case law, SEC v. W. J. Howey Co. (328 U.S. 293, 1946) provided the basis for the definition of an investment instrument. On this basis, the modern SEC is analyzing whether certain cryptocurrencies and tokens can be treated as securities, which entails registration and supervisory obligations.

In Europe, the adoption of Regulation (EU) 2023/1114 of the European Parliament and of the Council on markets in crypto-assets (MiCA) was a breakthrough. This act introduces a uniform legal framework for the issuance, trading, and protection of investors in the crypto-asset market. As De Filippi and Wright (2018: 203-208) emphasize, law in the blockchain era is no longer just a "rule of code," but a dynamic interaction between technology, institutions, and social values.

The economic dimension of cryptocurrencies also raises questions about their impact on the stability of financial systems. The IMF report (2021: 77-84) points out that the widespread adoption of cryptocurrencies may hamper monetary policy and weaken credit transmission mechanisms. At the same time, however, blockchain technology can support innovation in cross-border payments, reducing transfer costs and improving financial inclusion.

From an ethical perspective, the key question remains: should regulations restrict individual freedom in the name of protecting the common good? Rawls (1971: 244-247) argued that fair institutions must strike a balance between freedom and security. In the case of cryptocurrencies, this means the need to develop a regulatory model that, on the one hand, would protect users and the stability of the system, and on the other, would not stifle innovation.

In practice, there is a tendency towards compromise: countries are trying not to ban cryptocurrencies, but to regulate their trading, enforce AML (anti-money laundering) requirements, and introduce licensing mechanisms for exchanges. This policy is in line with

the principle that technology should be tamed and incorporated into the legal framework, rather than completely eliminated.

In summary, the economic and regulatory dimensions of cryptocurrencies reveal a fundamental tension: between their innovative potential and the risk of destabilization. It is in this space that the key task of ethics becomes apparent—to indicate the boundaries within which financial freedom becomes social responsibility.

Environmental ethics and environmental costs

One of the most criticized aspects of cryptocurrencies, especially those based on the proof-of-work (PoW) mechanism, is their impact on the natural environment. The process of mining Bitcoin and other PoW cryptocurrencies requires enormous amounts of electricity. Stoll, Klaaßen, and Gallersdörfer (2019: 1649-1652) estimated that the annual energy consumption of the Bitcoin network was comparable to that of entire medium-sized countries, leading to significant CO_2 emissions. De Vries (2022: 2168-2171) points out that despite some progress in the use of renewable energy, most miners use cheap coal-based energy, which exacerbates the problem of climate change.

From the perspective of environmental ethics, the question arises as to whether the benefits of financial freedom and technological innovation can justify the degradation of the ecosystem. In his encyclical Laudato si' (2015: §55-61), Francis emphasizes that the ecological crisis is also a moral crisis, and that all economic activity should be subordinated to concern for the common good and the protection of creation. Aristotle (2011: 117-120), in turn, pointed out in Nicomachean Ethics that the virtue of moderation presupposes the ability to restrain excessive desires, which in the context of cryptocurrencies means the need to limit immoderate energy consumption for the sake of profit.

The ecological issue also has a dimension of global justice. The largest mining farms are located in countries with cheap energy, often at the expense of local communities, which suffer from pollution and environmental degradation. Rawls (1971: 301-305) reminded us that fair institutions must take into account the interests of those who have no voice in the decision-making process. In the case of cryptocurrencies, the victims are often residents of peripheral regions, while the beneficiaries are global financial elites.

Attempts to address the problem come in the form of alternative consensus mechanisms. Proof-of-stake (PoS), promoted by the creators of Ethereum, significantly reduces energy consumption—according to Buterin (2022: 142-145), by more than 99% compared to PoW. However, the ethical question remains open: is the transition to PoS a real solution to the problem, or rather a shift of responsibility to other areas (e.g., concentration of power among large token holders)?

MacIntyre (2007: 192-196) emphasized that truly ethical action is not about maximizing individual benefits, but about building a community based on values. In this light, the cryptocurrency community faces a challenge: will it be able to incorporate the principle of environmental responsibility into its practices, or will it stick to the logic of unlimited profit?

In summary, the environmental costs of cryptocurrencies reveal a fundamental tension between technological freedom and responsibility towards creation. Ecological ethics demands that the future of digital finance be built not at the expense of the planet, but in harmony with it.

The philosophical foundations of cryptocurrency ethics: from Aristotle to Rawls

An ethical analysis of cryptocurrencies requires placing it in the broader context of moral philosophy. The history of ethics provides tools for understanding phenomena which, although technologically new, replicate age-old dilemmas related to freedom, justice, and the common good.

Aristotle, in Nicomachean Ethics (2011: 109-113), pointed out that the goal of human action is to achieve eudaimonia, understood as a full life in accordance with virtue. Cryptocurrencies can be analyzed in this spirit: do they contribute to the development of virtues such as prudence (phronesis) and moderation, or do they rather encourage greed and speculation? It seems that they are morally neutral in themselves, but the practices of their users determine their ethical significance.

Kant (1785/2011: 67-72) in Groundwork of the Metaphysics of Morals emphasized that the autonomy of the individual requires submission to the categorical imperative: one should act only according to a maxim that one can will to be a universal law. In the world of cryptocurrencies, this principle applies to the assessment of anonymity and decentralization.

As long as they serve to protect dignity and freedom, they can be considered ethically acceptable; however, if they become a tool for exploitation, fraud, or crime, they contradict Kant's idea of morality.

Rawls (1971: 54-59) proposes a theory of justice as fairness, in which social institutions must be designed to maximize the benefits of the least privileged. From this perspective, cryptocurrencies should be evaluated not by how much profit they bring to individuals, but by how they affect the communities most vulnerable to exclusion. If they are a tool for financial inclusion in countries without a stable banking system, they can be considered consistent with the principle of justice. However, if they exacerbate inequalities, they become ethically problematic.

The neo-Thomist tradition and the social teaching of the Church, in which the common good is placed above individual interests, also remain an important point of reference. Benedict XVI's encyclical Caritas in Veritate (2009: §36-38) reminds us that an economy without ethics becomes a source of alienation. In this sense, cryptocurrencies, designed and used solely for profit, are incomplete—they need to incorporate the perspective of solidarity.

MacIntyre (2007: 191-194), in his critique of liberalism, points out that ethics cannot be reduced to the autonomous choices of the individual, but must be rooted in community practices. Cryptocurrencies, as a technological and social project, highlight this very problem: is it possible to create a community of practice based on values rather than solely on economic interests?

In summary, the philosophical foundations of cryptocurrency ethics point to the need to combine perspectives: Aristotle's concern for virtue, Kant's principle of universalization, and Rawls's requirement of social justice ( ). Only such a synthesis allows us to grasp the full extent of the ethical challenges posed by the blockchain revolution.

Law, code, and ethics – cryptocurrencies in a normative context

The relationship between law and ethics in relation to cryptocurrencies is particularly complex. Positive law is a system of norms that are binding and enforceable by state institutions, while ethics points to values that should shape human actions, regardless of whether they are formally sanctioned. In the case of cryptocurrencies, the two spheres meet

and clash in a new, dynamic area of technology where traditional regulatory frameworks prove insufficient.

Lon L. Fuller (1969: 39-44) pointed to the existence of an "internal morality of law," encompassing principles such as generality, transparency, consistency, and enforceability of norms. Cryptocurrencies challenge this concept because their regulation requires reconciling the global nature of the blockchain network with local legal systems. The lack of uniform rules generates the risk of "regulatory arbitrage"—a situation in which entities move their activities to jurisdictions with the least restrictive regulations, thereby undermining the effectiveness of the law.

Roman law already distinguished between ius civile and ius gentium, pointing to the need for universal rules common to different communities (Justinian Digests 1985: Book I, Vol. 1). In a sense, cryptocurrencies reproduce this problem, demanding supranational normative solutions. Today's equivalent is, for example, the MiCA Regulation (2023), which aims to create a single market for crypto-assets in the European Union, counteracting the fragmentation of regulations.

However, the law is not always able to keep pace with technological innovation. Lawrence Lessig (1999: 85-89) formulated the thesis that "code is law," pointing out that digital architecture itself regulates user behavior. In the case of blockchain, consensus rules, smart contracts, and protocols constitute a normative framework parallel to statutory law. This raises the question: should the ethics of cryptocurrencies be based on code norms, or is it necessary to have an external, human-rooted set of values?

Rawls (1971: 55-58) reminds us that just institutions cannot be limited to the formal correctness of the law, but must reflect the values of the common good. In this spirit, cryptocurrency law should take into account not only investor protection, but also broader social and environmental considerations. Ethics is therefore an essential criterion for evaluating regulation: not every law is just, and a lack of regulation can lead to ethical chaos.

It is worth noting that the tension between ethics and law in the context of cryptocurrencies echoes a classic philosophical problem: should the law shape morality, or should morality set the limits of the law? Fuller (1969: 96-101) emphasized that without ethical foundations, law

degenerates into pure technique of power. Cryptocurrencies, as a global phenomenon, demand precisely this integration: law based on ethics and ethics rooted in legal practices.

In summary, the normative context of cryptocurrencies reveals three levels: statutory law, technological code, and social ethics. Each of these is insufficient on its own, but their synergy offers an opportunity to create an order that not only regulates but also educates toward responsibility.

Cryptocurrencies, social justice, and global inequalities

The issue of social justice in the context of cryptocurrencies is one of the key ethical issues. Proponents of blockchain technology point out that cryptocurrencies can contribute to financial inclusion by providing access to payment systems for people excluded from traditional banking institutions. In developing countries, where banking infrastructure is underdeveloped, a mobile phone and internet access are all that is needed to participate in the global financial circulation (Prasad 2021: 187-191).

However, the enthusiastic narrative about the democratization of finance often overlooks the fact that the benefits of cryptocurrencies are unevenly distributed. A BIS report (2018: 93-97) indicates that the vast majority of cryptocurrency assets are concentrated in the hands of a small group of investors and institutions. As a result, instead of reducing inequality, we are seeing it deepen: global technological elites are gaining additional tools for capital accumulation, while peripheral users bear the speculative risk.

From the perspective of political philosophy, Rawls (1971: 75-83) emphasized that fair institutions must be designed in accordance with the difference principle—allowing inequalities only when they serve to improve the situation of the most vulnerable. Cryptocurrencies, if they act as a vehicle for speculation and wealth concentration, are contrary to this principle. Sen (1999: 26-29), in Development as Freedom, noted that true development consists in expanding the real possibilities of individuals. Cryptocurrencies can support development if they actually enable people to use new economic tools, rather than just creating narrow profit niches.

It is also worth recalling here the teaching of John Paul II in his encyclical Sollicitudo rei socialis (1987: §33-38), where he drew attention to the structural nature of social sin,

manifested in the perpetuation of unjust economic mechanisms. Cryptocurrencies can become part of such a mechanism if, instead of inclusion, they create new forms of exclusion—e.g., through technological barriers, lack of digital education, or risks associated with cybercrime.

From the perspective of global inequalities, it is also important to note the differences in access to technology. While residents of Europe and North America use cryptocurrencies mainly as investment instruments, in Africa and Latin America they can serve as a substitute for unavailable banking services. Alvarez, Argente, and Van Patten (2022: 5-11), in their analysis of the case of El Salvador, which recognized Bitcoin as legal tender, point out that the effects of this experiment are ambivalent: on the one hand, it enabled some citizens to use modern tools, but on the other, it increased the risk of macroeconomic destabilization and dependence on volatile markets.

Finally, the issue of social justice in the world of cryptocurrencies should be seen in conjunction with environmental issues. The environmental costs of digital mining are borne primarily by local communities in countries with cheap energy, while the profits go to global investors. This transfer of costs to the most vulnerable violates the principle of solidarity and is an example of global injustice.

In summary, cryptocurrencies have the potential to promote social justice through financial inclusion, but in practice they often lead to greater inequality and exclusion. An ethical assessment of this phenomenon requires not only economic analysis, but also the inclusion of perspectives from political philosophy and social theology.

Religious and cultural interpretations of cryptocurrencies

The phenomenon of cryptocurrencies is not limited to the economic or technological dimension—it is also the subject of religious and cultural interpretations. In many circles, Bitcoin and other cryptocurrencies have gained an almost quasi-religious status, becoming a symbol of liberation from the power of state and banking institutions. These narratives create a kind of mythology of digital freedom, in which decentralization appears as a form of economic salvation.

Max Weber (1905/2011: 37–42) in The Protestant Ethic and the Spirit of Capitalism pointed out that economic practices are often rooted in deeper religious and ethical beliefs. In a similar way, the culture of cryptocurrencies refers to the ethos of independence, individual responsibility, and grassroots work. Some researchers interpret this culture as a new incarnation of the Protestant work ethic, adapted to the digital age.

From a Catholic perspective, cryptocurrencies are sometimes evaluated in the context of the Church's social teaching. Pope Francis' encyclical Laudato si' (2015: §129-134) emphasizes that the economy and technology must serve the integral development of the human person and not lead to exclusion and environmental degradation. Similarly, John Paul II in Sollicitudo rei socialis (1987: §33-36) warned against creating new forms of dependence and inequality. From this point of view, cryptocurrencies, if not oriented towards the common good, can be critically assessed as an element of an unjust global order.

In the tradition of liberation theology, represented by Gustavo Gutiérrez (1971/1988: 112-118), the economy should be a tool for the emancipation of the poor and marginalized. In this light, cryptocurrencies could serve as a tool for inclusion, as long as they are used in a communal and just manner. However, if they primarily serve the accumulation of capital by technological elites, they remain at odds with the message of solidarity and the preferential option for the poor.

From a cultural perspective, cryptocurrencies are becoming part of new forms of digital identity. Online communities are emerging that create their own rituals (e.g., HODL, to the moon), narratives, and symbols, and even treat the founder of Bitcoin, Satoshi Nakamoto, as an almost mythical figure. This sacralization of technology indicates that cryptocurrencies perform functions similar to those of civil religion: they organize the world of values, give meaning, and create community.

However, Morozov (2013: 127-131) warns against "technological solucionism"—the belief that every sphere of life can be saved by technological solutions. In this sense, treating cryptocurrencies as a remedy for all social ills may lead to the idolatry of technology, in which code replaces ethics and the market becomes a new idol.

In summary, religious and cultural interpretations of cryptocurrencies reveal that this phenomenon transcends economic and technical frameworks. Cryptocurrencies function as symbolic carriers of values and ideas that can be seen both as a path to freedom and justice and as new forms of idolatry. Their ethical assessment depends on whether they become rooted in traditions of caring for the common good and solidarity or remain a tool for deepening divisions.

Cryptocurrencies and individual freedom – the libertarian and community perspectives

The debate on cryptocurrencies essentially concerns two different concepts of freedom: individual freedom, emphasized in the libertarian tradition, and freedom rooted in the community, characteristic of republican and communitarian currents. Cryptocurrencies are often presented as a technology that liberates the individual from the domination of the state and banks, but their practical functioning shows that absolute autonomy is not possible without reference to the common good.

In the libertarian tradition, represented by Rothbard (1973: 41-47) and Nozick (1974: 149-153), freedom is equated with the absence of external coercion and full ownership rights to the fruits of one's labor and capital. Cryptocurrencies realize this vision by allowing individuals to freely trade financial resources outside the control of state institutions. Proponents of this perspective see blockchain as a tool of emancipation that allows for the construction of an economic system based on voluntary interactions and contracts, without the interference of central regulators.

However, Hannah Arendt (1958/2000: 144-148) emphasized in The Human Condition that freedom does not exist in isolation, but is realized in the space of common action. Similarly, MacIntyre (2007: 184-190) pointed out that true individual autonomy is only possible within the framework of community practices that shape virtues and values. Cryptocurrencies, if they become solely a tool for individual profit, threaten to degenerate freedom into anarchic selfishness. However, if they support cooperation and communal forms of exchange, they can become a means of achieving the common good.

Rawls (1971: 202-208) reminds us that individual freedoms must be linked to principles of social justice. In order to be ethically justified, financial freedom in the world of cryptocurrencies must be balanced by mechanisms to protect the weakest market participants. This means that although blockchain technology allows individuals to avoid traditional institutions, the political community has the right and obligation to create a regulatory framework that protects against exclusion, abuse, and destabilization of the system.

The libertarian perspective sees cryptocurrencies as a tool for complete individual sovereignty. The community perspective, on the other hand, reminds us that freedom without responsibility becomes an illusion. As Aristotle (2011: 112-114) wrote, true freedom lies in the ability to choose what is good in accordance with reason, not in the freedom to act arbitrarily. In this sense, cryptocurrencies require an ethic that can combine individual autonomy with concern for the community.

In summary, individual freedom in the world of cryptocurrencies must be considered in the tension between the libertarian idea of complete autonomy and the communitarian postulate of responsibility towards the community. Only then is it possible to build an ecosystem in which technology does not destroy social bonds, but strengthens them.

Cypherpunk, anarchism, and the political origins of cryptocurrencies

Cryptocurrencies have their roots not only in technological innovations, but also in a specific political and ideological vision. As early as the 1980s, David Chaum (1985: 1030-1034) pointed to the need for a payment system that would protect individual privacy from state and corporate interference. His concept of "electronic cash" was a response to the growing digitization of the economy and the associated risk of surveillance.

This gave rise to the cypherpunk movement, which developed in the 1990s and whose members—including Timothy C. May, Eric Hughes, and Hal Finney—saw cryptography as a tool for political emancipation. In the Crypto Anarchist Manifesto, May (1992) wrote that encryption would enable the creation of a new social order in which the state would lose control over the flow of information and capital. The guiding idea was the belief that

technology could replace political institutions and that computer code could become a tool of freedom.

Maurer, Nelms, and Swartz (2013: 263-267) interpret Bitcoin as a social experiment in which technology not only enables transactions but also tests alternative models of power and community. In this sense, blockchain can be understood as a political project of decentralization—an attempt to transfer trust from the state and financial institutions to algorithms and peer-to-peer networks.

However, as Golumbia (2016: 41-45) notes, the cypherpunk and anarcho-capitalist narrative also carried risks. Under the guise of individual freedom, there is often extreme libertarianism, which rejects all community and social responsibility. In this view, cryptocurrencies become not so much a tool of emancipation as a means of dismantling institutions that support the common good.

Philosophically speaking, the cypherpunk movement was rooted in the tradition of anarchism and criticism of the state, but at the same time it reflected certain utopian hopes characteristic of technological modernism. Unlike classical anarchists, who advocated the construction of alternative social structures, cypherpunks believed that it was enough to change the communication and financial infrastructure to create a new political order.

In practice, Bitcoin and subsequent cryptocurrencies are the legacy of this ideology. Their designed anonymity, lack of a central administrator, and resistance to censorship are a conscious realization of the cypherpunk vision of "financial autonomy." At the same time, however, history shows that a complete escape from state institutions is impossible—cryptocurrencies remain entangled in the legal, economic, and social systems they seek to contest.

In summary, the political origins of cryptocurrencies lie in the ideas of digital anarchism and libertarianism. Understanding this genesis allows us to better assess their current functioning: as a technology that, on the one hand, promises freedom and decentralization, and on the other, raises questions about social responsibility and the limits of individual autonomy.

Cryptocurrencies, the labor market, and professional transformation

Blockchain technology and cryptocurrencies are having an increasing impact on the labor market, both structurally and ethically. Like previous technological revolutions, digital decentralization is leading to the emergence of new professions and employment models, but at the same time it is eliminating traditional forms of work, bringing with it the risk of marginalization of social groups that are not adapted to the changing economy.

According to a report by the World Economic Forum (2020: 14-19), the development of blockchain technology is conducive to the creation of new professional roles, such as network security analysts, smart contract developers, and regulatory compliance experts. At the same time, jobs related to cryptocurrency exchange operations, digital asset management, and legal advice on crypto assets are emerging. The future of the labor market is therefore shaping up to be one of technological specialization, requiring a high level of digital knowledge.

De Filippi and Wright (2018: 157-163) point out that blockchain enables the development of new models of professional collaboration, such as decentralized autonomous organizations (DAOs), which redefine the relationship between employer and employee. In such structures, decisions are made collectively by token holders, and traditional hierarchies are replaced by algorithmic rules. However, such organizations raise questions about accountability, fair distribution of profits, and the possibility of abuse of less privileged participants.

Kshetri (2021: 89-95) notes that blockchain can support transparency and sustainable development in supply chains, which affects working conditions in manufacturing sectors. By recording data on the production process, it becomes possible to monitor ethical standards, such as the prohibition of child labor and compliance with environmental standards. In this sense, the technology can promote labor justice and strengthen human rights.

At the same time, professional transformation poses serious challenges. Many traditional professions related to the banking, financial, and even accounting sectors may be reduced as a result of blockchain-based process automation. In this context, the ethical challenge is to ensure that technological changes do not lead to mass exclusion of workers, but are

accompanied by reskilling and upskilling mechanisms. Sen (1999: 38-41) reminds us that development should consist in expanding the real opportunities of individuals, which in practice means the need to invest in education and the adaptation of employees to new conditions.

Tapscott and Tapscott (2016: 211-217) emphasize that blockchain opens up opportunities for a trust-based sharing economy in which workers can offer their services directly online, eliminating intermediaries. This type of model can increase professional autonomy, but at the same time exposes individuals to a lack of social protection and income instability. This raises the question of how to ensure a balance between professional freedom and community responsibility for job security.

In summary, cryptocurrencies and blockchain are changing the labor market on many levels—creating new opportunities but also generating new forms of risk. An ethical analysis of this process requires balancing the perspective of technological innovation with concern for workers' rights and social inclusion.

Culture of speculation and investor responsibility

One of the most controversial aspects of the cryptocurrency world is the phenomenon of speculation. The dynamic rises and falls in the value of Bitcoin or Ethereum attract millions of investors who treat the crypto market as a form of quick profit, often resembling financial gambling. In this context, the question arises about the ethical responsibility of the individual towards themselves, the economic community, and the global financial system.

Aristotle, in Nicomachean Ethics (2011: 47-51), pointed out that true virtue lies in the "golden mean" — between extravagance and greed. The speculative frenzy surrounding cryptocurrencies often goes beyond this measure, leading to irrational behavior on the part of investors who risk their entire fortune in the name of getting rich quick. Keynes (1936/2007: 158-162) described similar mechanisms, pointing to the "beauty contest" of financial markets, in which investors are guided not by the fundamental value of assets, but by their predictions of the moods of other market participants.

From the perspective of virtue ethics, MacIntyre (2007: 191-197) noted that economic practices should serve the internal goods of the community, not just the maximization of

individual profit. Crypto speculation, based on short-term gains, separates finance from the real economy, becoming a practice devoid of virtue and destroying social trust.

Rawls' perspective also makes an important argument: if, as Rawls (1971: 243-250), justice is "the first virtue of social institutions," then investors should be aware that mass speculation destabilizing the market can hit the weakest participants in the economy, who bear the consequences of crises and inflation. The investor's responsibility therefore goes beyond his individual decisions – it also includes the consequences for the entire economic community.

In the Judeo-Christian tradition, the Bible repeatedly warns against greed and irresponsible accumulation of wealth. In the Gospel according to Luke (12:15), we read: "Be on your guard against all greed, because even when someone is rich, his life does not depend on his possessions." In relation to cryptocurrencies, these words remind us that speculation, if it becomes an obsession and detaches itself from the common good, threatens the moral integrity of the individual.

In summary, the culture of speculation in the world of cryptocurrencies reveals a tension between the individual's freedom to invest and their responsibility to the community. Investor ethics require not only economic rationality, but also an awareness that their decisions shape the structure of justice in the financial system.

The ethics of blockchain miners and developers

The cryptocurrency ecosystem relies on the work of two key groups: miners, who provide the network's computing power, and developers, who develop and maintain blockchain protocols. Both groups make a fundamental contribution to the functioning of the entire system, while also facing specific ethical challenges.

The work of cryptocurrency miners, especially in Proof-of-Work systems, is controversial due to its enormous energy and environmental costs. Research by Stoll, Klaassen, and Gallersdörfer (2019: 1647-1652) has shown that Bitcoin's carbon footprint is comparable to the greenhouse gas emissions generated by a medium-sized country. Similarly, de Vries (2022: 2168-2172) argues that the energy consumption of cryptocurrency networks is difficult to reconcile with the principles of sustainable development. The ethical question,

then, is whether miners, profiting from mining, can ignore the environmental costs passed on to all of humanity.

From the perspective of Aristotle's classical virtue ethics (2011: 117-120), work should be directed toward the common good. If mining destroys the environment and threatens future generations, it is difficult to consider it ethically justified. MacIntyre (2007: 194-199) emphasized that human practices are morally valuable if they realize intrinsic goods and support the development of the community—in this sense, mining based solely on greed undermines its ethical meaning.

Blockchain developers, on the other hand, act as architects of a new financial system. Lawrence Lessig (1999: 6-12) pointed out that "code is law" – programmers' decisions are normative in nature, shaping the behavior of millions of users. The responsibility of developers is therefore not only to ensure the technical correctness of the code, but also to anticipate the social and economic consequences of their decisions. Fuller (1969: 39-42) noted that the morality of law requires clarity and predictability – the same criteria can be applied to blockchain code, which should be transparent and resistant to arbitrary manipulation.

It is worth emphasizing that programmers and miners are co-creators of the infrastructure on which user trust depends. If they neglect issues of security, transparency, or ecology, they undermine the foundations of the digital community. On the other hand, when they develop more sustainable mechanisms—such as Proof-of-Stake, promoted by Buterin (2022: 73-79)—they contribute to the ethical transformation of the entire system.

In summary, the work ethic of miners and blockchain developers requires a departure from a purely technical or economic perspective. Both groups should be aware that their actions have social, environmental, and normative dimensions. This responsibility includes both concern for the stability of the system and the common good of humanity.

User safety and the responsibility of exchanges

The issue of user security is one of the most serious ethical problems in the world of cryptocurrencies. Although blockchain technology itself provides a high level of transparency and resistance to manipulation, cryptocurrency exchanges, which act as intermediaries

between the digital world and traditional finance, remain the weak point of the ecosystem. They are most often the target of hacker attacks, fraud, and abuse, which raises questions about the extent of their responsibility to investors.

Narayanan et al. (2016: 145-149) emphasize that one of the main problems with cryptocurrency exchanges is the lack of full transparency regarding reserves and security procedures. The collapse of the Mt. Gox exchange in 2014, which resulted in the disappearance of approximately 850,000 Bitcoins, became a symbol of the lack of adequate protective and regulatory mechanisms. This event showed that even the most decentralized technology does not eliminate risk if the intermediate points are managed irresponsibly.

Fuller (1969: 39-44) in The Morality of Law pointed out that in order to be moral, the law must ensure clarity and predictability of rules. Similarly, exchanges should implement transparent rules regarding data security, protection of funds, and procedures in the event of failures or intrusions. The absence of such standards constitutes a violation of basic institutional responsibility towards users.

Legal regulations play an important role in this context. Regulation (EU) 2023/1114 of the European Parliament and of the Council on markets in crypto-assets (MiCA) introduces a uniform legal framework for the entire European Union, imposing on exchanges the obligation of transparency, responsible management, and protection of customer interests. This document reflects Rawls' principle of justice (Rawls 1971: 211-216), according to which the freedoms of individuals must be protected by institutions that guarantee balance and security in the social system.

From an ethical point of view, exchanges act as trustees—their task is not only to enable trading, but also to ensure that market participants do not become victims of fraud or manipulation. If they ignore this requirement, they undermine the foundation of trust without which no economic community can function.

In summary, the responsibility of cryptocurrency exchanges has both a technical and a moral dimension. It includes the need for advanced security measures, financial transparency, and compliance with the legal framework. Otherwise, the financial freedom offered by cryptocurrencies is distorted by the risk of chaos and market anarchy.

Positive potential: financial inclusion and new models of cooperation

The debate on cryptocurrencies often emphasizes their negative aspects—speculation, crime, and environmental costs. However, their positive potential cannot be overlooked, which, from an ethical perspective, is linked to financial inclusion and the opening up of new forms of cooperation. Cryptocurrencies and blockchain technology can be a tool not only for capital accumulation, but also for expanding access to basic economic services and building more equitable social relations.

Prasad (2021: 215-222) points out that in many regions of the world, millions of people remain outside the traditional banking system due to a lack of infrastructure, identity documentation, or trust in institutions. Cryptocurrencies can give them access to digital payments, savings, and credit—all they need is a phone and an internet connection. In this sense, blockchain can become a tool for financial inclusion, fulfilling the demands for equality and economic justice.

De Filippi and Wright (2018: 205-210) emphasize that blockchain allows for the development of decentralized models of cooperation, in which traditional hierarchies are replaced by networks of mutual trust. Examples include digital cooperatives and peer-to-peer platforms, which enable joint resource management and profit sharing. In such structures, code replaces arbitrary decisions by institutions, which promotes transparency and participation.

Allen (2022: 142-148) notes that fintech and cryptocurrencies can promote greater financial stability if they are used to create solutions that support micro-entrepreneurship. In practice, this means that small entrepreneurs in developing countries can gain access to financial tools that were previously reserved for large corporations.

The philosophical perspective of Amartya Sen (1999: 27-31) reminds us that development is primarily about expanding human capabilities and freedoms. Cryptocurrencies, if they support the ability of individuals to participate in the economy and society, fulfill an emancipatory function. They can therefore become a tool of solidarity—provided that they are not subordinated solely to the logic of profit maximization.

In practice, examples of the use of blockchain in humanitarian projects, e.g., for the distribution of aid in refugee camps, show that this technology can support those most in need by ensuring the transparency and security of transfers (WEF 2020: 31-35). Thus, cryptocurrencies and blockchain, although often associated with elite speculation, can serve as a tool for social justice under the right conditions.

In summary, the positive potential of cryptocurrencies lies in their ability to overcome financial exclusion and build new models of cooperation. The ethical challenge remains whether the global community will be able to use these opportunities for the common good, or whether they will be appropriated by a few interest groups.

Future scenarios: financial utopia or dystopia?

The development of cryptocurrencies opens up extremely broad prospects for the world of finance, but at the same time raises questions about whether the future will take the form of a utopia of money democratization or rather a dystopia of chaos and exclusion. These scenarios are not purely theoretical—we are already seeing trends that could point in both directions.

On the one hand, enthusiasts of blockchain technology emphasize its potential to create a more equitable, transparent, and fraud-resistant financial system. De Filippi and Wright (2018: 221-227) point out that decentralization makes it possible to limit the power of central institutions and create space for innovation and economic self-governance. In such a scenario, cryptocurrencies could implement Rawls' principle of equal opportunity (Rawls 1971: 65-73), offering access to financial tools regardless of place of birth or social status.

However, critics warn against the opposite scenario. Golumbia (2016: 53-57) notes that instead of democratization, the cryptocurrency movement may lead to the concentration of capital and the strengthening of extremely libertarian ideas that reject institutions of the common good. In this view, cryptocurrencies could become a tool for new technological oligarchies, reproducing inequalities and weakening states.

The environmental issue is also significant. Stoll, Klaaßen, and Gallersdörfer (2019: 1655-1660) point out that intensive cryptocurrency mining may destabilize global efforts to reduce CO_2 emissions in the long term. De Vries (2022: 2175-2180) emphasizes that if sustainable

mechanisms are not introduced, cryptocurrencies may become a symbol of financial dystopia—a technology that contributes to ecological disaster.

Sen (1999: 88-92) reminds us that true development consists in expanding human freedom and capabilities. The utopian scenario therefore assumes that cryptocurrencies will support the emancipation of individuals, the development of micro-entrepreneurship, and financial inclusion. The dystopian scenario, on the other hand, is associated with deepening inequality, financial anarchy, and environmental degradation.

The ethical question about the future of cryptocurrencies therefore concerns the social and institutional framework that will be given to them. Morozov (2013: 131-135) warns against the illusion of technological solutionism, which assumes that technology alone will solve social problems. The future of cryptocurrencies does not depend solely on algorithms, but on the ethical and political choices of the communities that shape them.

In summary, the future of cryptocurrencies lies somewhere between utopia and dystopia. They can become a tool for global justice and solidarity, but they can just as easily become a source of new forms of domination and crises. Resolving this tension will depend on the ethical responsibility of both the creators of the technology and political institutions, as well as the users themselves.

Synthesis of issues and ethical recommendations

An analysis of the ethical dimensions of cryptocurrencies shows that this phenomenon is multidimensional and its assessment depends on the philosophical, economic, and social perspective adopted. Cryptocurrencies carry enormous potential for financial freedom and innovation, but at the same time they give rise to risks related to inequality, speculation, crime, and environmental degradation.

A synthesis of the above considerations leads to several key issues:

1. *The tension between freedom and responsibility* – the libertarian tradition (Rothbard 1973; Nozick 1974) sees cryptocurrencies as a tool for absolute individual autonomy, while the communitarian perspective (Arendt 2000; MacIntyre 2007) reminds us that

freedom must be linked to the common good. An ethical assessment of cryptocurrencies requires finding a balance between these two visions.

2. *Issues of social* justice—as Rawls (1971: 75-83) notes, institutions must be designed to improve the situation of the weakest. Current cryptocurrency practices often exacerbate inequalities, but there is potential for financial inclusion (Prasad 2021; Sen 1999) if appropriate support mechanisms are implemented.
3. *Environment and sustainability* – research on Bitcoin's carbon footprint (Stoll, Klaaßen & Gallersdörfer 2019; de Vries 2022) shows that this technology requires an ethical transformation towards more environmentally friendly solutions, such as Proof-of-Stake (Buterin 2022).
4. *Security and regulation* – cases of cryptocurrency exchange collapses indicate that financial freedom cannot exist without a responsible institutional framework. Regulations such as MiCA (2023) are an attempt to respond to this challenge.
5. *Culture of speculation* – virtue ethics (Aristotle 2011; MacIntyre 2007) and biblical teaching (Luke 12:15) warn against greed and intemperance, which can lead to economic destabilization and the destruction of social bonds.

In light of these problems, several **ethical recommendations** can be proposed:

- *The principle of balance:* cryptocurrencies should be developed in a way that combines individual freedom with concern for the common good, avoiding the extremes of libertarianism and statism.
- *The principle of inclusion:* the priority should be to combat financial exclusion through projects that support access to blockchain technology for the poorest.
- *The principle of environmental responsibility:* any development of cryptocurrencies should take into account their environmental impact, promoting energy-efficient models and renewable energy sources.
- *The principle of transparency and trust:* exchanges and intermediaries must operate in accordance with the highest ethical and legal standards, ensuring the protection of users.

- *The principle of virtue and moderation:* investors should be aware that financial speculation is not an end in itself, and that an ethical attitude requires responsibility towards the community.

In summary, cryptocurrency ethics requires an interdisciplinary approach that combines philosophical reflection, legal regulations, and economic practice. The future of cryptocurrencies depends not only on technological development, but above all on the ethical choices of individuals, communities, and institutions that shape this new financial world.

Conclusion

Towards the ethics of responsible freedom in the world of cryptocurrencies

The analysis carried out in this article shows that cryptocurrencies are one of the most complex phenomena of our time, combining technological innovation, economic dynamics, social tensions, and philosophical questions. Their significance lies not only in their function as an alternative means of payment, but above all in the fact that they are becoming a symbol of disputes over freedom, justice, and responsibility in the global order.

On the one hand, cryptocurrencies realize the ideal of financial freedom: they enable individuals to become independent of central banks, open up access to economic services for excluded people, and foster new models of cooperation based on trust. In this sense, they can be seen as a tool for emancipation which, according to Amartya Sen's intuition (1999: 27-31), expands the real capacity of individuals to participate in economic and social life.

On the other hand, however, the practice of cryptocurrencies reveals the dark side of technology: speculation, concentration of wealth, use for criminal activities, and above all, enormous environmental costs. In Rawlsian terms (1971: 75-83), such inequalities and threats undermine the principle of social justice, and from an ecological perspective – as Francis reminds us in Laudato si' (2015: §129-134) – they become a manifestation of a lack of care for the common home of humanity.

In the face of these tensions, it is necessary to formulate an ethic of responsible freedom. It is based on four principles:

1. *Freedom rooted in the common good* – individual autonomy in the use of cryptocurrencies must be linked to concern for stability and community justice.
2. *Financial inclusion as a priority* – cryptocurrencies should serve to expand access to financial services, especially in excluded regions.
3. *Sustainable development and ecology* – blockchain technologies must be developed in accordance with the principles of environmental responsibility, eliminating excessively energy-intensive models.
4. *Transparency and institutional trust* – exchanges and intermediaries must operate in accordance with the principles of legal ethics (Fuller 1969: 39-44), ensuring the safety of users.

The conclusion of this study is therefore twofold. First, cryptocurrencies are neither inherently good nor bad – their ethical assessment depends on how they are used and regulated. Second, the future of cryptocurrencies will depend not so much on the technology itself as on the ethical and political wisdom of the communities that will define the framework for its operation.

As MacIntyre (2007: 263-267) wrote, ethics cannot be limited to technical calculations, but must be based on a common search for the good. If cryptocurrencies become part of such a practice, they can contribute to building a more just and solidarity-based world. However, if they are appropriated by the logic of greed and anarchy, they may prove to be one of the most serious threats to social and ecological stability in the 21st century.

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