AZKA AKADEMI ZAKAT PPZ

AZJAF
AZKA INTERNATIONAL JOURNAL OF ZAKAT & SOCIAL FINANCE ISSN : 2735-1890 e-ISSN : 2716-6643
Vol.3 No.1 (2022)

azka.zakat.com.my

DOI: 10.51377/azjaf.vol3no1.94

LIMITATIONS OF THE SDGS IN THE LIGHT OF A ZAKĀT APPROACH IN TERMS OF RESILIENCE

ABDERRAZAK BELABES
Professor of Economics, Islamic Economics Institute, King Abdulaziz University, Jeddah, Saudi Arabia. E-mail: abelabes@kau.edu.sa

A PEER-REVIEWED ARTICLE
(**RECEIVED** – 6TH JULY 2021: **REVISED** – 17TH FEB. 2022: **ACCEPTED** – 3RD MARCH 2022)

ABSTRACT

The aim of the study is to explore the limits of SDGs in the light of a *zakāt* approach in terms of resilience. It is based on the progress of research in philosophy of science, anthropology, mesology, and collapsology, by considering the phenomenon of *zakāt* in its ontological dimension as a level of analysis. Among the main results of the study, the following should be noted: (i) the SDGs convey an underlying epistemological model based on the growth of endless production, which itself feeds on the ex nihilo creation of money; (ii) Associating *zakāt*, as a component of social finance, with the SDGs amounts to submitting it to a global financial system based on ex nihilo monetary creation; (iii) The assimilation of *zakāt* into a means of financing contributes to the financialization of Muslim societies life to comply with the requirements to financial structures and logics. The study concludes by arguing the following: (i) the results obtained reveal the limitations of the linear approach of *ribā* as a purely technical solution that does not consider the ontological nature of the mainstream financial system; (iii) *Zakāt* is a multidimensional phenomenon which strengthens the resilience of populations to shocks through the creation of own worlds (milieu, umwelt, fûdo 風土); (iii) *Zakāt* cannot be reduced to a financing modality to fill the SDGs funding gap, as suggested by UN, World Bank and OECD.

Keywords: Methodology of Building Knowledge; Zakat phenomenon; Resilience; limitations of the SDGs.

INTRODUCTION

Sharing a portion of available resources with the needy to be closer to the divine, consolidate human relationships and deal with shocks that jeopardize social cohesion, is a phenomenon rooted in human behavior since man appeared on earth, under different words. The Judaic tradition uses the word *tzedaka* from the Hebrew (צדקה). Christianity uses that of charity from the Latin Caritas, which corresponds to the Greek ἀγάπη. In Islam, reference is made to the word *ṣadaqah*. Hinduism, Buddhism, and Jainism use the word *dāna* from the Sanskrit दान. The Confucian tradition uses the word ren from the Chinese 仁. The Japanese tend to use the word 喜捨. The gift is a universal anthropological invariant to all religions and spiritual traditions that cannot be reduced to the market exchange, or its opposite, its alternative, under the effect of the mirror game. To grasp this otherness in all its depth, it is necessary to go beyond the culture of origin, the conceptual intermediaries, and the technical tools. It is a kind of suspension of judgement on others and on oneself, by detaching oneself from one's thoughts and emotions (Godelier et al., 2014: 82), but this is not an easy thing to do in spite of one's efforts: to say it is one thing, to do it is another!

Assimilating the gift, a world heritage that dates to the dawn of time, to a financial instrument to achieve sustainable development goals, is pure speculation even when it comes from respectable international organizations. In its program for development, which addresses the actors of Islamic finance as partners, the UN writes: "*Islamic social finance tools – Zakat (mandatory almsgiving), Sadakah (charitable giving), Waqf (endowments) - are highly aligned with the spirit of the SDGs*" (UNDP, 2020). This discourse in fashion is echoed by other international organizations such as the OECD (2020: 18) and the World Bank (Abdul Aziz & Zhang, 2019). Fashion is false intelligence that spoils everything that is true in intellectual research.

If the notion of social finance does not reflect the nature of the phenomenon of *zakāt* and its multiple dimensions, It has its source in a cognitive dissonance which renounces considering the embarrassing truth in the hope that finally - but without really knowing how - everything is going to be all right. Hence the discourse on the integration of environmental, social, and good governance factors in financing activities, which does not call into question the dogma of infinite economic growth.

This is tantamount to preserving the basic structure of the existing system and ultimately acting as if nothing had happened. The performative nature of this discourse will significantly influence the reality of the *zakāt* phenomenon in the years to come.

On the contrary, it is advisable to substitute an approach in terms of relations that of quantities by rehabilitating the creative reciprocity of the social relationships to free oneself from the omnipresence of market relationships, to put an end to the indebtedness and bank credit caused by ex nihilo money creation. This approach helps overcome to overcome the obsession with an illusory reimbursement and completely counterproductive austerity policies, restore the notions of the in appropriable, the inalienable, and the commons beyond the organization of life around the sacrosanct private property which feeds an obligation of infinite growth and perpetuates the vicious circle of indebtedness.

The same approach also helps to renew interaction with living milieus to build specific worlds (*Umwelt* in German, *fûdo* 風土 in Japanese) (Berque, 2016), unlike ecology which is defined more as the science of the environment. Thus, on the one hand, in its relation to the environment, being is not an object, but a subject that actively interprets the environment to develop its specific world; on the other hand, the specific world should not be confused with the raw data of the environment.

LITERATURE REVIEW

In view of the literature consulted, this study is the first of its kind to challenge not only the fact of considering the phenomena of *ṣadaqah, zakat*, and *waqf* as simple financial tools in the service of Islamic social finance, but also of submitting them to the sustainable development goals, starting from the idea that development must balance social, economic, and environmental aspects. The combination of these three objectives raises many questions, both theoretically and practically: how to conceive and achieve at the same time economic efficiency, social equity, and ecological sustainability? Is this association between seemingly irreconcilable objectives possible? Are economic growth, poverty reduction, and environmental protection compatible and achievable simultaneously?

In a report by the United Nations Conference on Trade and Development (UNCTAD, 2018: iii), entitled *Achieving the Sustainable*

Development Goals (SDGs) in the Least Developed Countries (LDCs), it is stated: "*Revitalizing sustained and sustainable economic growth and employment creation in the LDCs, and accelerating the structural transformation of their economies, will be indispensable to achieve the SDGs*". These words illustrate in a particularly striking way the pre-eminence of economic growth underlying the conception of sustainable development. In other words, to achieve sustainable development, it is enough that economic growth is sustainable and social and environmental problems will be solved with more economic growth. In fact, whatever the preferred objective (social, economic, environmental), it is always the same logic that is at work. In the name of respecting major financial balances to meet the commitments made, it is the law of the market that has the last word, whether we like it or not, in the name of common sense, realism and pragmatism.

Ignoring the variety of human experiences throughout history, the mainstream discourse on SDGs makes the model of endless growth based on industrial production the only way to solve humanity's problems of which he is the originator: climate change, poverty, indebtedness, and social inequalities. Despite good intentions, this discourse is unable to take into account entropy, i.e. the hidden face of ever-increasing production, which inevitably leads to the depletion of natural resources, which concerns biodiversity, plant resources (deforestation, removal of about 25% of the plant mass-produced by the planet each year), the extinction of species, but also minerals and raw materials.

Moreover, the discourse on SDGs tacitly promotes the generalization of private property, which is the fundamental condition for obtaining credit, and therefore for indebtedness. Islamic social finance is encouraged to act in this direction beyond the products of which it claims to be. In any case, these latter regardless of their names are assimilated to private credit as if it was an interest. However, to multiply the *sadaqah*, *zakat*, and *waqf*, by way of promotion of the inappropriate, the inalienable and the common, is to reduce the possibilities of getting into debt and having to rely on the growth of industrial production to serve the interest of the debt which leads to a vicious circle from which it is extremely difficult to escape (Rist, 2018).

In sum, the approach adopted after careful consideration leads to a challenge of the assimilation of the phenomenon of *zakāt* to a financial tool and its submission to the SDGs despite their success in Islamic

finance circles. Indeed, it is a question of approaching the discourse in a way to better understand what the specific mental forms of reasoning are and economic thought. This requires first analyzing in all its consequences the conceptual mutation that equates *zakāt* with a financial product.

RESEARCH METHODS

The study is based on a multidisciplinary approach that involves advances in scientific research from both classical disciplines, including philosophy of science, history, and anthropology, as well as new fields of knowledge, i.e. mesology (or the science of own worlds created by living beings from interaction with the living environment) and collapsology (which is concerned with the possible collapse of thermo-industrial civilization).

A multidimensional phenomenon such as *zakāt*, rooted in the history of humanity and referred to by different names, requires a multidisciplinary approach that is equal to the risks it faces in order to form a complex system that must be deconstructed to release its structure. This is a huge challenge because it requires changing the way of approaching the phenomenon of *zakāt* beyond purely economic considerations and it is not always an easy task.

This multidisciplinary approach requires neutralizing technical language so as not to take oneself for the spokesperson of a universal rationality. Whether it is the language of economics, finance, or that of the jurisprudence of financial transactions (*Fiqh al-mu'āmalāt al-māliyah*), these languages do not make it possible to explore phenomena in all their complexity. They only allow to describe the objects imposed by the material culture and the liquid life. Hence the need for each of us to listen himself and read himself to constate the gap that exists between what he feels and what he says or what he writes really.

AN ANALYSIS OF THE ARCHITECTURE OF THE CONCEPT OF SOCIAL FINANCE AS PART OF A COMPLEX SYSTEM

The imminent danger posed by the growing financialization of society and daily life prompts a reconsideration of the way knowledge is acquired and, consequently, the way it is evaluated, beyond the identification of the characteristics of the right theory (Popper, [1934]1959) and the most efficient way to develop it (Lakatos, & Alan, 1970). The accumulation of knowledge around a given theory (Kuhn, 1962) is not in itself a guarantee

of scientificity. As Henri Poincaré rightly notes: "*The Scientist must set in order. Science is built up with facts, as a house is with stones. But a collection of facts is no more a science than a heap of stones is a house*" (Poincaré, [1902]1968): 458).

The need to use what the living environment offers according to need, avoiding the depletion of natural resources, imposes profound transformations in the process of knowledge construction beyond the quantification based on the price signal (Hayek, 1945). As Nicolas Bouleau (2018) points out, the use of highly sophisticated computer resources and the application of some of the most advanced mathematical theories impose highly volatile prices that claim to reflect the economic health of the planet and provide reliable indications for its governance. In reality, the price signal is not visible and economic agents are forced to act as if nothing had happened. In its very sophisticated mathematical outfit, which protects it from prying eyes, finance sees nothing of the depletion of natural resources to the detriment of all, nor of the rise in the inequalities that threaten social peace. The overcoming of the mode of governance based on the trends of the financial markets requires the elaboration of non-financial quantitative indicators in units of mass, the volume, the surface where the real evolutions are visible. This would provide better information on the real state of the Earth and its inhabitants so that actors can act proactively with full knowledge of the facts, each at his own level according to his specific world.

This prospective exploration of the risks that lie in wait for *ṣadaqah*, *zakat,* and *waqf* in their substance could, in time, induce research programs that include fears in scientific work (Bouleau, 2017) in the same way as the search for general trends, often qualified laws, in an imprecise manner. In fact, it is not possible to find, in social sciences and more particularly in economics, laws which take the form of well-identified and always verified relationships between two or more variables (Guerrien, 2004: 101). This way of treating the phenomena of *ṣadaqah, zakat*, and *waqf*, ontologically speaking, as a level of analysis, could open up research perspectives to raise awareness of the dangers of the glorification of financialization under the pretext of improving the image of Islam which embodies a developed civilization and to raise the level of efficiency of the Islamic social finance products. This requires analyzing the architecture of the notion of social finance as part of a system. It should not be

considered as a panacea for the fight against poverty which is a social construction and not a concept that can be defined on a universal level.

The world is immersed in an economic language which, by equating poverty with the lack of possession of a sufficient quantity of money, prevents us from addressing the phenomenon in-depth and understanding its genesis (Rahnema, 2003). The calculation of the poverty line, while useful to justify certain measures that are not neutral, remains a partial and misleading approximation of reality because it does not take into account all living conditions, particularly non-tangible and non-quantifiable factors. The conception of poverty based solely on monetary income results in a punitive and stigmatizing categorization that excludes certain parts of society qualifies as poor people who do not see themselves as such, with the consequence of potentially have the wrong target, and in some cases, contribute to a shift from poverty to misery (Girard & Schéou, 2013). The basic problem is not development, poverty, lack of money, but obstacles of all kinds which prevent people from leading their lives according to their convenience.

According to the current economic discourse, the Muslims who lived until the industrial revolution were all poor because they lacked the goods and services produced by thermo-industrial civilization. For the anthropologist Marshall Sahlins (2017: 98) no human being had seen himself as poor for hundreds of thousands of years. Poverty "*is the invention of human civilization*". In short, poverty is a doubly relative phenomenon. On the one hand, it depends on the individual and collective perception of the needs necessary for life. On the other hand, poverty does not exist in itself in an absolute way; it is always embodied in an antinomic relationship with wealth. As an African proverb says: *where there is no wealth, there is no poverty*. There can be no poverty if there is no mechanism for the accumulation of wealth based on an unequal relationship. Hence the interest of the word of God: ﴿***So that it does not circulate among the only rich among you***﴾ [Surah 59, verse 7]. The idea that there can be a society that is poor on its own and perceives itself as such is pure nonsense.

Figure 1 illustrates that the substance of the issue is not limited to a linear relationship between *ṣadaqah*, *zakat*, and *waqf*, on the one hand; social finance, on the other. It requires a systemic analysis that shows that

one element calls for another, so that the phenomena of *ṣadaqah*, *zakat*, and *waqf* become at the mercy of mathematism (ideology of governance by numbers) (Supiot, 2017) and dataism (ideology of governance by data) (Harari, 2017). This normative ideal aims at the effective achievement of measurable goals rather than obedience to just laws. Driven by mathematics and then by the digital disruption, this institutional imaginary is that of a society where the law gives way to program and regulation to regulation. Faced with this development which deserved attention away from the model building which is limited to the relation between things without worrying about their substance, the beauty of mathematics is to do something that machines cannot do by intuition. As Henri Poincaré ([1908]1947: 137) rightly notes: "*It is by logic that we prove, but by intuition that we discover*". It is not a mathematization oriented towards quantitative, reductionism, and control but rather towards the discovery and the construction of understanding through an approach which seeks to understand what it is possible to understand by exploring constantly its own limits. In sum, while it is necessary to analyze the architecture of the notion of social finance as part of a complex system, the assimilation of the phenomenon of *zakāt* to a social financial institution is far from neutral.

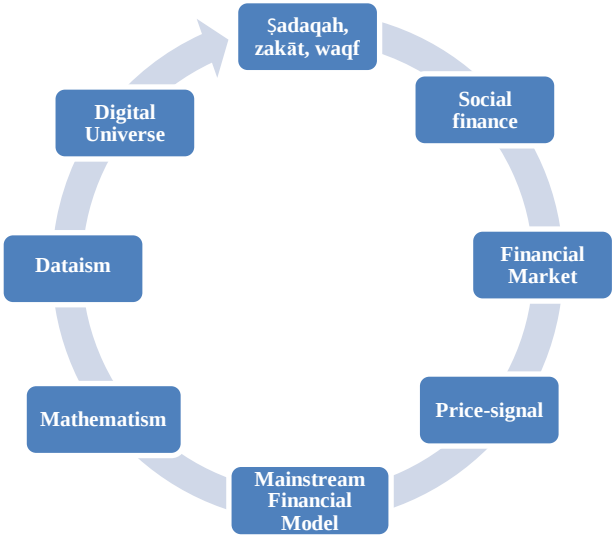

Figure 1. Social finance as part of a complex system
Source: Author's own

THE PITFALLS OF EQUATING THE PHENOMENON OF *ZAKĀT* WITH A SOCIAL FINANCIAL INSTITUTION

If the assimilation of the *zakāt* to a social financial institution gives the impression at first glance of being up to date with the progress of social finance, the archaeology of the discourse shows in the filigree the notion of a social and solidarity economy referring to organizations that produce goods and services while pursuing both economic and social objectives. These organizations typically include foundations, associations, cooperatives, mutuals, and social enterprises generating income whose purpose is to achieve social and/or environmental benefits. Since these organizations do not seek to maximize their profits at the expense of social and/or environmental considerations, they sooner or later become vulnerable in terms of funding. Thus, while they generate funds from membership contributions and shares and income by selling goods and services, the sources of funding remain generally insufficient to build up reserves and finance the future expansion of their respective activities. Moreover, because of the financial, social, and/or environmental objectives, these organizations often face challenges in raising capital on the conventional financial market. This attitude, often rooted in local realities, which is not focused on short-term profit maximization, makes them less attractive to traditional investors (pension funds, commercial banks) looking for maximum short-term returns.

If the progress of scientific research in quantum physics has revealed that anyone who observes an experiment will influence it and be affected by it in turn (Zwir, 2020), this suggests the risk of significantly affecting the direction of *zakāt* acquittal and emptying the phenomenon of its substance in the years to come, from a one-dimensional conceptualization that perceives only the financial aspect, in the era of financialization, under the pretext that efficient markets prices always reflect the fundamental values of assets (Summers, 1989: 266). In this sense, speculation extends its hold not only on the assets subject to *zakāt*, but also on the amounts paid for the *zakāt* obligation with respect to the required conditions, i.e. the *nisāb* (quantity, weight, or minimum amount) and the *hawl* (possession of the asset during one lunar year).

Moreover, while the financialization of *zakāt* will be characterized progressively by the expansion and proliferation of financial assets, these latter will come at the expense of the zakatable assets rooted in real life, in

terms of local activities that ensure resilience to exogenous shocks. In this sense, financialization will lead to the appropriation of a surplus created by the acquittal of *zakāt* that financialization itself has not generated from a perspective of creating value beneficial to local populations. As a result, the *zakāt* becomes part of a process of subordinating buying, selling, and investing in the realm of speculative finance. However, as Taha Jabir al-Alwani (2020: 74) rightly points out in his book *The Exegesis of the Qur'ān by the Qur'ān*: "*Negative phenomena and the processes of change that follow from them in the proven and authentic concepts, if they are not avoided and eliminated as soon as they appear, they will turn into something more dangerous so that their repercussions will continue to pass from a severe state to a more accentuated one until the mind of the wise man feels unable to deconstruct them, analyze them and propose an adequate treatment*".

This conceptual assimilation of *zakāt* to a component of social finance reveals a flagrant ignorance of the challenges of financialization, to the benefit of transnational corporations working respectively in the fields of banking, insurance, and investment. The respective leaders of these three sectors are JPMorgan Chase, Berkshire Hathaway, and BlackRock (Buchter, 2020). Most financial firms practice tax evasion, concealment of real data, and systematic manipulation of legal, legislative, and regulatory texts through financial, accounting, and tax engineering that takes a very complex approach like Russian dolls Матрёшка (Renahy, 2019).

The concentration of asset management in the hands of a few ended up open a breach to a transnational corporation to reap huge rewards after the toil of millions of people, through a digital risk management platform that prides itself on using a new form of intelligence based on big data and artificial intelligence to invest differently. This platform manages about 18 x 10^{12} US dollars every day, which is not far from the GDP of the United States, i.e. the wealth that Americans produce for a year (Ockers, 2019). This exploitation and valuation of data considered as the new strategic and competitive advantage of companies take the form of a structural dilemma having the effect of preventing, restricting, or distorting the play of competition in the financial markets through express or tacit agreements (Massa *et al.,* 2020). For pioneering companies, data science is the most strategic activity in their business model, and they devote their necessary resources to it. Such a geo-economic situation calls for the implementation of a new regulatory framework to consider not only the risks of banks, but also

of investment companies that became very popular after the banking and financial crisis of 2007-2008, which eroded the hard-won credibility of banks.

BlackRock's investment in companies operating in the same sector limits competition and increases prices under the influence of common ownership (Azar *et al*., 2018), which means that these companies do not act for the benefit of their clients, but for the benefit of the investment companies that own them. What counts in this kind of exercise is not the actual volume of business, but rather the ability to influence others through hard power, soft power, and sharp power. On the other hand, the Aladdin digital platform gives its owner an unprecedented advantage in managing investments and financial operations for institutional investors, including asset managers, pension funds, sovereign wealth funds, insurers, and corporate treasurers. It produces private risk exposure data to advise central banks, notably the US Federal Reserve (Goldstein, 2020) and the European Central Bank (Temple-West, & Khan, 2020), through a standardized and performative language. These unprecedented facts, which allow the giants of finance to control the world and the course of human life in all its aspects, necessitate pausing and stepping back from the over-financialization of the *zakat*, and *waqf* under the influence of the assumption of the efficiency of the financial markets and the pretext of mobilizing the *zakat*, and *waqf* for the financing of micro-projects, by means of interest-free loans.

It is obviously not a question of denying the importance of financing, but rather of limiting its omnipresence to reasonable dimensions to control the systemic risks that finance poses to the life of human societies and to free them from the crises in which they irreversibly engulf them, due to the privatization of profits and the socialization of losses through the principle of the intervention of the lender of last resort. Those who support the over-financialization of *zakāt* and waqf, regardless of their epistemological referent and their ontological nature as a level of analysis, believe that in life everything is funded, and that finance is the most important thing in life because it allows you to get what you want by investing the money of others. On the other hand, goods subject to *zakāt* lead to the realization that money is not everything and is not the most important thing in life, but is one of many things that are part of a rich and enjoyable life.

Fashionable notions such as Islamic social finance and non-bank Islamic financial institutions, despite their growing popularity among the young and inexperienced generation, constitute a major obstacle to the

development of authentic knowledge that is closely related to the major challenges facing the world today, the most important of which is the preservation of the human species and the increase of its chances of survival, as revealed by the Covid pandemic-19. This distancing from what is fashionable leads to the need to free oneself from dead ideas that lead to erroneous conceptualizations, or more precisely that prevent phenomena from being conceptualized in a rigorous way. A dead idea is an idea that was considered to be true, but which, with the progress of knowledge over the decades, is no longer so.

THE NEED TO FREE OURSELVES FROM DEAD IDEAS LIKE SUSTAINABLE DEVELOPMENT

It is surprising to seek at all costs to revive the slogan of sustainable development, which breaths his last after Dennis Meadows, lead author of the Club of Roma's report *The Limit to Growth,* said: "*It is now too late for sustainable development, we must now prepare for resilience*" (Gambino, 2012), in a lecture on 1 March 2012, on the 40th anniversary of the report's publication. When parties whose interests seem to diverge at first sight (politicians, transnational corporations, trade unions, ecologists, economists) simultaneously claim the slogan of sustainable development to qualify their action, is there not a reason to question its scientific credibility, its relevance, and its legitimacy? Some forms of consensus are reassuring because, at first sight, they appease conflicts; others are disturbing because they conceal the basic problems and authorize practices that are contrary to those that the discourse seems to promote (Rist, 2006: 1). While the founding report of the concept of sustainable development has the merit of sounding the alarm once again about the dangers caused by economic growth, which is responsible for serious environmental damage: the widening of the ozone hole, climate change due to the greenhouse effect, deforestation and the desertification of ever-larger areas, the remedies it proposes are totally ineffective for at least two reasons.

The first reason stems from the definition of sustainable development which consists of "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Rapport Brundtland, 1988: 11). The notion of needing has no operative character; it reduces man to his bio-physiological

dimension, ignoring the psychological, cognitive, spiritual, and sociocultural dimensions. The second is that it is not applicable to communities that do not make material need the alpha and omega of life. What really poses a problem for most human beings, living outside Europe and North America, is not so much the satisfaction of material needs as the obstacles which prevent, each at his level, to create his own world. However, as Gilbert Rist (2006: 3) has rightly pointed out: "*Since the notion of sustainable development suffers, from the outset, from a total lack of an operational definition, no one can claim the right to determine what it really means. It is therefore not surprising that everyone uses it to serve their own interests*".

The proposed remedy, focusing on the need for "*a new era of economic growth, vigorous growth and, at the same time, socially and environmentally sustainable*" (Rapport Brundtland, 1988: xxiii), is s perplexing because the solution itself is the source of the problem, attempting to promote both one thing and its opposite, through the promotion of the fight against climate change and development based primarily on unbridled industrial production that uses fossil fuels and generates CO2 emissions, the promotion of poverty eradication and development based on efficiency, knowing that the primacy is given to production over distribution (Okun, 1975: 1), and that inequality is an indispensable element of economic efficiency (Eloi, 2016: 30-37). What is most surprising is that the promoters of sustainable development have not diagnosed why the industrialized countries have led humanity to this situation. They looked for remedies without diagnosing the causes. What is certain is that the basic indicators are on an upward trend (per capita food consumption rate, per capita population growth rate, per capita service rate, per capita environmental pollution, per capita industrial production), apart from the remaining natural resources that are not being replenished. If the economic model based on endless growth reaches its limits, the Meadows report speaks of the collapse of the system of 2030, as shown in figure 2. This is obviously a hypothesis that deserves attention because the damage is known to all.

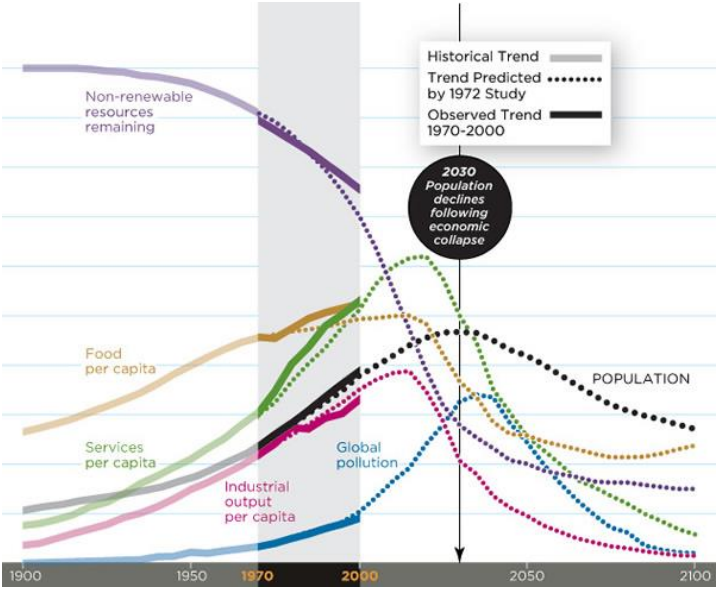

Figure 2. Predictions for the evolution of the relationship between humanity and the planet
Source: Meadows et al. (2006: 217)

When humanity consumes more natural resources than ecosystems can replenish, it becomes evident that the time for sustainable development is over. Whether we realize it or not, that does not change the facts. According to the latest statistics from the Global Footprint Network for the year 2020, humanity consumed on August 22 what the Earth generated from natural resources in the same year, which means that humanity consumes 1.6 times that all of Earth's ecosystems can generate this year. In other words, humanity consumes in less than nine months the resources generated by the earth for a year. As shown in figure (3), after humanity consumed 74% of natural resources in 1961, it began to consume them since the early seventies of the last century at a rate faster than the Earth's capacity to renew them, reaching about 150% in the period between 1960 and 2008. This means that humanity has entered a phase of consumption of natural resource reserves. This ecological deficit constitutes an explicit threat to life on earth. The most important of these natural resources is groundwater. However, without

water, there is no life, as a verse from the *Qur'ān* testifies: ﴿***And We created from water every living thing***﴾ [Surah 21, verse 30].

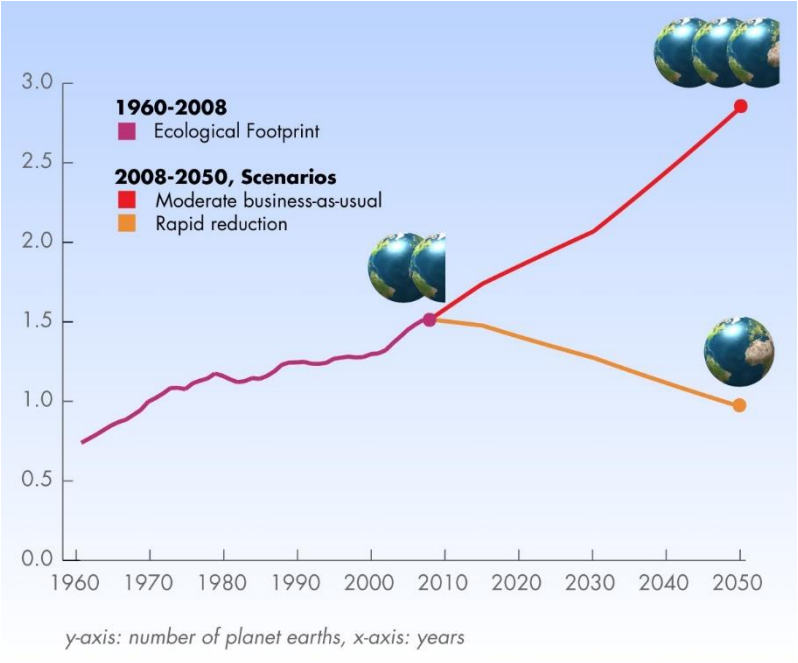

Figure 3. Humanity is consuming natural resources at a rate faster than the Earth's ability to regenerate them
Source: Global Footprint Network

While the negative impact of humans on the climate system has become evident and is increasing on all continents and oceans, many changes have occurred since the 1950s at a rate unprecedented over thousands of years. As noted in a report by the Intergovernmental Panel on Climate Change (IPCC), an intergovernmental body open to all member countries of the United Nations (UN), humans are primarily responsible for 95% of global warming (GIEC, 2014: v). This alarming observation calls for in-depth reflection on how to understand the environment and treat it correctly, based on the idea that there are different ways of living on the Earth, of organizing life between humans, of cohabiting with living beings, of thinking of a world that does not

exclude water, air, animals, and plants, as shown by the developments in scientific research in anthropology, particularly in Amazonia (Descola, 2019). As a result, when large landowners cut down forest trees, they devastate the Amazon on many levels and scales: they destroy the livelihoods of local people who have lived there for millennia; they reduce biodiversity; they destroy the soils of the forest canopy that were reasonably used by local inhabitants (with knock-on effects on the local climate); and they put an end to a integrated system of creations of specific worlds.

As further indicated by research on the exploration of worlds resulting from the interaction of animals and humans with the living environment, in accordance with the notion of *umwelt* developed by Jacob von Uexküll ([1934]1984) and that of *fûdo* (風土) developed by Testuro Watsuji ([1935]2011). This is a field of knowledge, called mesology, which deserves attention because it opens up new horizons for research in the social sciences in terms of diversifying locally anchored solutions. Each living being lives in a world of its own according to its system of perception of the living environment. Therefore, living things do not perceive the same world even if they live in the same environment. Focusing on sustainable development, and the objectives that stem from it, has become an unreliable requirement for enlightened minds in favor of a way of thinking that favors a more flexible organization of life at the local level to ensure resilience in a satisfactory manner (Sinaï *et al.* 2015), to future shocks caused by the endless production model (Meadows, 2012), increasingly under the influence of banking credit based on ex nihilo monetary creation. In view of these rapid developments, which show the inability of economists to grasp the dangers facing humanity and its terrifying consequences with their traditional analytical tools, notably the price signal, sustainable development appears to be a dead idea. This is in line with Malek Benabi's conclusion from over half a century ago: "*Every society creates the ideas that kill it. After that, they become dead ideas that take root in its social heritage and represent a greater danger for it than the ideas that kill it*" (Benabi, 2002: 130). These frightening developments call for a reconsideration of the role of local structures, even in minimizing the severity of external shocks. Hence the importance of exploring the notion of resilience.

EXPLORING THE GENEALOGY OF THE CONCEPT OF RESILIENCE

Among the words that have received widespread attention in recent times following the outbreak of the Coronavirus disease (COVID-19) is the word resilience, which is often seen as synonymous with endurance, resistance, solidity, and strength, as evidenced by the National Center for Textual and Lexical Resources, created by the French National Center for Scientific Research (CNRTL). Appeared in the English writings in physics, to denote the ability to restore the original form after exposure to shock or deformation (Codron, 1913: 196-198), its use has spread to psychology, psychopathology, educational psychoanalysis, pedagogy for to study how to deal with psychological trauma (Danan, 2008), to be employed in studying the interactions between societies and their living environment in a world which is witnessing the collapse of modern thermo-industrial civilization. Starting from the observation that it is illusory to hope for infinite growth in a world with finite resources, this literature states that such a collapse is no longer an imminent risk to be prevented, but a certainty for which we must prepare to switch to an energy mix based on renewable resources (Hopkins, 2011). A recent study has shown that this burgeoning literature emerged during the 1990s in the wake of the crumbling of the sustainable development model, which professed to optimize fossil fuels, in favor of a degrowth logic that aims to do without them (Larrère, 2020).

This brief historical overview, linked to the genealogy of the concept, shows that the capacity of human groups to respond to external shocks is based on three fundamental elements, as follows:

- The ability to make decisions and to reconsider them if necessary in the case of unexpected changes.
- The ability to learn and adapt, which requires diversifying learning methods and taking advantage of the experience of others.
- Stimulate collective intelligence, as the sustainability of a human community is only viable if its members feel that it benefits all without discrimination or exclusion.

Theoretically, resilience in the broadest sense appears to be the capacity of a given system to overcome alterations caused by one or more disturbing elements to return to its initial state and/or normal functioning. It refers more explicitly to its capacity to absorb shocks, to undergo

changes while preserving its functions, its structure, and its feedback loops. These can be positive or negative. So-called positive feedback amplifies changes and tends to destabilize the system. In contrast, so-called negative feedbacks tend to reduce changes and stabilize the dynamics of the system. The notion of resilience reflects the ability of systems to absorb disturbances and adapt to change while preserving their functions, structure, and feedback loops. Resilience invites us to broaden reflection and interaction with the living environment through an approach that values resources that are too often overlooked or forgotten under the effect of cultural alienation. This formulation has the merit of highlighting two major dimensions of resilience: resistance to destruction and building an existence worth living through an own world. In sum, resilience results from the interaction between the human being and his or her environment, between the imprints of what he has experienced before and the context of the moment in all its multidimensionality. It also results from the interaction between risk factors and protective factors.

Faced with the catastrophic effects generated by the economic system based on endless growth, itself nourished by the bank credit resulting from ex nihilo money creation, the importance of the concept of resilience lies in the in-depth exploration of the reality of societies resulting from the thermo-industrial civilization with its bright and dark aspects. In this respect, Ivan Illich said: "*Our civilization thinks it knows what it is gaining with tools, but it does not know what it is losing*" (Dijan, 2020: 10). Abdel Wahab El-Messiri (2009: 311) made the same observation about Rifa'a al-Tahtawi (1801-1873), after his visit to France (1826-1831) as a leading member of the first Egyptian educational mission: "*He confined himself to seeing the material achievements without questioning the negative effects of what he had seen*". As Miguel de Unamuro points out: Industrial civilization, *"in its essence, is a civilization without soul, because it is a civilization without end, or, more exactly, whose ends are external to us, if not even foreign*» (Chevalier, 1948: 13). This leads to the need to organize the life of human communities in such a way that the tool is at the service of the person integrated into the community, and not at the service of a body of specialists. If the tool encompasses both the axe and the hand of the woodsman who uses it in such a way as to cut only what is useful, once it is used to cut the whole forest, he is deprived of its human intention through a system which subordinates it to another logic. By submerging the universe of tools,

technical systems which seem to work for themselves hamper any possibility of autonomy and any initiative of emancipation. Thus gradually, modern technique changes man's relationship to the real, which is no longer a one-sided relationship of calculation (Heidegger, 1993).

THE MYTH OF UNLIMITED ECONOMIC GROWTH

If in the world of mathematics, it is possible to assume the growth of an exponential function *ad infinitum*, as a quantity that changes according to the weight of another quantity, in the real world there is a ceiling that should not be exceeded regarding the natural ability of ecosystems for renewal. The utopia of unlimited growth will inevitably lead humanity straight into the wall, knowing that unlimited growth in a finite world is an illusion, despite substantial technical progress which is often counterproductive. Indeed, beyond the critical thresholds, the more technical progress grows, the more it becomes an obstacle to the achievement of the very objectives it is supposed to serve. The wonder at technique leads to the impoverishment of the relationships that unite a man to himself, to others, to his living environment, to the Earth, a common good that must be protected.

The discourse on ecology which emphasizes individual actions and technical solutions does not call into question the productivist logic of the system based on the growth of production, technical progress, and ex nihilo money creation. The GDP internationally has increased sevenfold in fifty years. In a century, the world's population has quadrupled, and energy consumption has increased tenfold. If each inhabitant of the earth should consume as much produced goods as those of industrialized countries, in 2050 it would be necessary to produce eight times more energy. In addition to the growth of GDP, population and energy, many variables take a worrying turn, in particular: water and energy consumption, fertilizer use, engine and phone production, tourism, atmospheric concentration of nitrogen dioxide and methane, and a number of floods, damage to ecosystems, forest destruction and the rate of extinction of living organisms (Steffen *et al.*, 2007: 617).

These rapid transformations at an unprecedented rate have generated a new field of knowledge, called collapsology (Diamond, 2004; Servigne & Stevens, 2015), which uses scientific developments from different disciplines to address the inevitability of the collapse of the way

of life-based on thermo-industrial civilization and endless production nourished by ex nihilo money creation. This awareness opens the field for the invention of alternative forms of inhabiting the Earth, organizing ourselves among humans, and maintaining relationships with creatures by overcoming both economism and ecologism (Illich, 2013: 22-24). It is not a question here of disputing the importance of the environmental issue, nor of denying global warming or the anthropogenic greenhouse effect. What is at issue is the reduction of humans to their biological dimension and their degradation to the rank of mere living beings.

If it is no longer possible to ignore the collapse of the system of growth based on industrial production that is nourished by fossil fuels, it is necessary to strengthen the resilience of human societies, reduce greenhouse gas emissions, invent economic systems that are less dependent on rare mineral resources. We must explore all possibilities to push back the deadlines and give ourselves enough time to reorganize the planetary functioning by adapting to changing climatic conditions. In the face of these challenges, we can build our capacity to move forward and be resilient around people, not around our respective economic systems based on efficiency, i.e. the ability of networks to handle the volume of whatever presents itself to them as an opportunity so as to maximize their immediate interest. Hence the need to integrate resilience into economic analysis beyond the notion of efficiency in its narrow conception.

THE NEED TO INTEGRATE RESILIENCE INTO ECONOMIC ANALYSIS BEYOND MARKET EFFICIENCY

A NASA-funded study using a model that deals interdependently with human and natural dynamics (Handy) has shown that the two most important components of the collapse of human societies throughout history are: the unlimited exploitation of available natural resources and their inequitable distribution (Motesharrei *et al.,* 2014). The greater the gap between rich and poor, the greater the risk of societies collapsing at a faster and more irreversible is large. Injustice breeds animosity, social instability, and even revolt. This can ultimately lead to the disintegration of society. As Ibn Khaldūn (2001: 263) wrote more than six centuries ago in his famous book *al-Muqaddimah* (The Prolegomena): "*The wisdom behind the prohibition of injustice by the Lawgiver lies in what it causes as the devastation of life in the city, which is the prelude to the disappearance of the human species*". The

same idea is found in Ibn al-Azraq's book *Badā'i al-Silk fī Ṭaba'i' al-Mulk* (The Wonders of State Conduct and the Nature of Kingship): "*The wisdom intended by the law through the prohibition of injustice lies in the fact that it is the prelude to the extinction of the human race*" (Ibn al-Azraq, 1977: 224). This association between injustice and the spectre of the disintegration of society encourages everyone to cooperate to maximize the advantages and minimize the disadvantages by first ensuring the basic needs (Ibn Abī al-Rabī‘, 1978: 136-137).

Furthermore, advanced modelling of natural systems, based on the observation of natural living beings (animals and plants), shows that living beings do not limit themselves to optimize efficiency, i.e. the capacity to grow in volume in a natural ecosystem, but ensure the optimal balance between two poles: efficiency on the one hand and resilience of the other. These two phenomena are in turn a function of two structural variables: the diversity and the number of interconnections. While resilience increases diversity and the number of interconnections, efficiency improves by reducing diversity and eliminating less important connections. Moreover, modelling of natural systems has revealed that in any sustainable system resilience is almost twice as important as efficiency. Under these conditions, any complex system that pushes efficiency beyond its window of viability without taking resilience into account is bound to fail sooner or later (Lietaer & Kennedy, 2008: 205-206). Just as it is necessary to avoid putting all the eggs in one basket, it is important to organize the life of the communities so that if the big tree falls in the forest the offspring can take its place so that life does not stop but continues to move forward. As Antonio Gramsci (1975, 1: 311) rightly pointed out: "*The crisis consists precisely in the fact that the old dies and the new cannot be born*".

The interest of modelling natural systems is to make the notion of collapse clearer regarding the impossibility of ensuring the basic needs of most of the population through the market system or a central authority. This somewhat unexpected development gives greater credibility to Al-Ghazali's definition of *maslahah* as "*originally an expression which consists in bringing an advantage or repelling a disadvantage*" (Al-Ghazāli, 1993: 174). Minimizing a disadvantage or resilience is no less important than providing a benefit or efficiency. Moreover, if there is a conflict between

the benefit and the disadvantage of equal weight, priority is given to minimizing the disadvantage or resilience (Al-Zarqa, 1993: 205).

If the obsession with efficiency to increase the volume of production and decrease the cost leads to competition under the effect of conflicting interests, the awareness of the fragility of resilience stimulates cooperation, solidarity, and benevolence to build a better world. A recent study found that, for 3.8 billion years, humans, animals, plants, fungi, and microorganisms have practiced mutual aid. Moreover, the living beings that survive best in difficult conditions are not necessarily the strongest, but those that help each other the most. Through a transdisciplinary survey, which explores ethology, anthropology, psychology, and neuroscience, the study invites us to explore an immense forgotten continent to discover the mechanisms of this "*other law of the jungle*". In short, there are two laws of the jungle: the first, which is forgotten, is the law of cooperation, mutual aid, altruism; the second, which is put forward, is the law of competition, aggression, the struggle of all against all (Servigne & Chapelle, 2017).

These rapid developments in various fields of knowledge give more credibility to the approach that considers that *sadaqah*, in general, and *zakat*, in particular, are not only material goods and tangible assets, but also and above all a human phenomenon that can be used as a level of analysis, as a memory of the world, a common heritage rooted in history, it is one of the last things that is kept when it is necessary to throw things to avoid the sinking of the ship.

EXPLORATION OF DIMENSION OF THE ZAKAT PHENOMENON IN TERMS OF THE DIVERSIFICATION OF LIFESTYLES

Despite the impressive number of writings devoted to *zakāt*, it remains a human phenomenon that has not been explored in all its dimensions, perhaps the most salient of which is the diversification of lifestyles focused on basic needs. This dimension of diversification indicates the importance of the local level in resisting the shocks that have spread to the higher levels (commune, department, region), and in reactivating the forms of collective management that have been gradually swept away by the industrial revolution since the end of the 18th century, to the benefit of polarity between the public and the private (Leroy-Beaulieu, 1900: 946).

The dimension of diversification also leads to overcoming the belief that individuals are selfish beings essentially driven by financial motives. This requires an anthropological refoundation of man as a being driven by many aspects other than selfish interest and which initiates multiple forms of cooperation (Dardot & Laval, 2014: 113).

While the model of *al-'Umrān al-Basharī* (settlement of the city), otherwise known as *al-Ijtimā' al-Insānī* (human grouping), intersects in terms of *Maqāṣid* (purpose) with the phenomena of *zakāt* and *waqf* in providing basic needs without living on credit on the back of the natural environment, from the moment that the amount of natural resources consumed is less than what the natural environment can provide in one year. This systemic analysis shows that in their essence the phenomena of *zakāt* and *waqf* encourage local and solidarity-based solutions that regenerate ecosystems. If it is not sustainable to live on credit in terms of natural resources to avoid droughts and soil erosion, the rule is valid in terms of individual consumption. In their philosophy, the phenomena of *zakāt* and *waqf* tend to minimize the use of credit in all its forms, whether it is a credit against nature, or against a usurer who lends with interest. In contrast, the growth model based on bank borrowing through ex nihilo monetary creation leads to the depletion of natural resources and the degradation of the environment. Humanity is becoming more and more indebted to nature.

The difference between the two philosophies is significant regarding the function of *Māl* in the broad sense of the word, i.e. what is beneficial. If in the growth model based on bank credit by ex nihilo money creation, money is an end in itself. In the model of *al-'Umrān al-Basharī*, what is strictly speaking beneficial is only a means for the realization of the right of God and the right of creatures, be they humans or non-humans (animals, plants, djinns, artefacts like the Ka'aba). This is the spirit of *hadīth qudsī* (a word of the Prophet Muhammad (ﷺ) as received by God): "*Allah said: We have sent down the Māl to perform Salāt and to pay Zakāt*" (Hadīth reported by al-Tabarānī (1979, 3: 279), mentioned by al-Haithamī (2009, 7: 121), and qualified as Authentic; see: al-Albānī (1988, 1: 366).

One of the explanations of this saying is that God created what is beneficial and made it accessible to His creatures to fulfill the rights towards the Creator and the rights towards the creatures, each one

according to his level of responsibility. In this sense, if what is beneficial is used for the purpose for which it was created, it is considered an act of worship regardless of the nature of the recipient. The use of what is beneficial in areas other than what it was created for having harmful consequences that are difficult to measure. For example, those who speculate on the financial markets without being aware of the disastrous effects of their actions on people's lives should ask themselves about the metaphor of the butterfly effect: "*Does the flap of a butterfly's wings in Brazil set off a tornado in Texas*?". In the case of the Lorenz model, as shown in Figure 4, each initial condition results in an orbit roughly resembling two wings of a butterfly. In addition, all the eye sockets agglutinate on the same object, also in the shape of a butterfly, called the Lorenz attractor. This form may explain the choice of this insect by Philip Merilees.

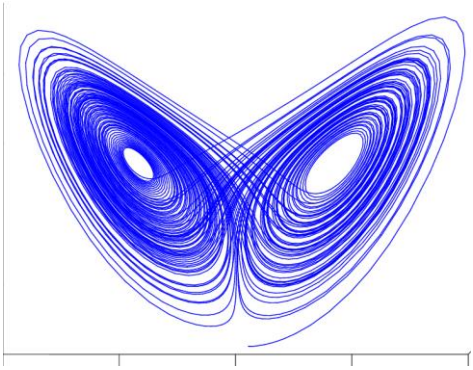

Figure 4. Lorenz's attractor is shaped like a butterfly (Title given by Philip Merilees to the intervention of Edward Lorenz at a conference of the American Association for the Advancement of Science in Washington in December 1972; see: Witkowski, N. (1995). La chasse à l'effet papillon. *Alliage*, 22, 46-53.)
Source: Hart et al. (2020).

This link between *zakāt* and *waqf* under the prism of debt prevention in the broadest sense of the term reveals the importance of these two phenomena as a memory of the world and a common heritage rooted in human history. The *waqf* phenomenon has entrenched a culture of self-organization in local communities so that higher authority intervenes only in cases where problems cannot be resolved at a lower level. In this regard, during a discussion on the importance of *awqāf* in

regulating the life of Muslim communities, historian Khalil Inalcık (2007, 1: 149) mentioned that the Ottoman state informed farmers when they requested it to build dams to regulate the use of water from Lake Konya that was their business and not that of the state. This has opened the way to revitalize the monetary *waqf* in the noblest sense of the term so that the means of acquittal are not an end but a means to better serve the communities in the light of emerging needs (Belabes, 2021). Under the Ottoman era, with regard to the historical documents available, the monetary *waqf* was applied in 1423 in Erdine, the capital city of the Ottoman Empire from 1369 to 1453. A decade after the fall of Constantinople in 1453 which became the new capital, the monetary *waqf* has become the most prevalent form of *waqf* in the region (Alarnaut, 2018: 42).

This historical fact shows the contribution of the *awqāf* in the improvement of the quality of life and makes their preservation the responsibility of all. They also stimulate collective action for the use of natural resources without depletion (Ostrom, 2020). What is beneficial to the community is not exclusively private and public property, as Paul Leroy-Beaulieu has pointed out, citing the phenomenon of *waqf,* which is particularly remarkable in the Muslim world, according to his statements. The acquittal of *zakāt* expresses man's belonging to his society and the desire to improve his resilience, not to harm him to satisfy personal desires. If a man had wanted a fruit hanging on the top of a huge tree without being able to pick it, the only solution he had left to satisfy his desire was to cut down the tree, which he did without realizing the consequences. This example eloquently illustrates the opposite of the spirit of *zakāt*. To survive, man must learn to live with nature by using and sharing without harming. He should not feel that he owns nature, he simply uses it.

CONCLUSION

Among the main results of the study, the following should be considered with the utmost care:

- The SDGs convey an underlying epistemological model based on the growth of endless production, which feeds on the *ex nihilo* creation of money, i.e. excessive indebtedness that leads to overstepping the limits of financial prudence.

- Associating *zakāt*, as a component of social finance, with the SDGs amounts to subjecting it to a global financial system based on *ex nihilo* money creation. Despite its spread to an unprecedented frequency, this association reveals the limits of the conceptualization of Islamic finance in terms of participation in profits and losses in the form of an inverse mirror to a system assumed to be based essentially on interest.
- The assimilation of *zakāt* into a means of financing contributes to the financialization of Muslim societies life to comply with the requirements of the financial structure and logic. This conceptualization, which has been making headway in minds, will lead to the domination of financial flows related to *zakāt* at the expense of the flows of *zakāt* assets that feed the real economy, i.e. to the detriment of the quality of the social relationships.

In terms of recommendations, the study advocates the following:

- The results obtained reveal the limitations of the linear approach of *ribā* as a purely technical solution, based on a principle of interest, that does not consider the ontological nature of the mainstream financial system which is based more deeply on the power to create money (Belabes, 2022). Contrary to what is taught in economics faculties, banks are not financial intermediaries that drain the financial capacities of some agents to lend them to other agents. Banks are companies that have been given the right to create money ex nihilo.
- *Zakāt* is a multidimensional phenomenon that strengthens the resilience of local populations to shocks. Al-Khalīl al-Farāhidī's approach (2003: 261) to the notion of *ma'āsh* in its broadest sense, i.e. which refers to a double meaning "*what allows to live with*" and "*what allows to live inside*", is very useful in this sense. It intersects with Marshall Sahlins' emphasis ([1974]2017: 550) on the process of material existence rather than that of purely individual need satisfaction. This perspective calls for a revisiting of the place of what is qualified today as the economy in history and society (Polanyi, 1977).
- *Zakāt* cannot be reduced to a financing modality to fill the SDGs funding gap, as suggested by UN, World Bank, and OECD. In its

essence in terms of lifestyle, the phenomenon of *zakāt* encourages local people to create their own worlds (milieu, umwelt, fûdo 風) by interacting through their multidimensionality with the living environment, i.e. by considering the spiritual, emotional, intellectual, and physical aspects of the human being. Man is not a financial animal, just as he is not an "*economic animal*" as Marcel Mauss ([1923-1924]2012: 231) rightly pointed out almost a century ago. Independently of the epistemological framework it seems that our way of acquiring knowledge related to economic life makes us blind to global and fundamental problems.

ACKNOWLEDGEMENT

This study is funded by the *Chair of Dr. Abdulhadi H. Taher for Studies of Fiqh and Accounting of Zakāt*, Faculty of Economics and Administration, Jeddah, King Abdulaziz University, Saudi Arabia.

REFERENCES

Abdul Aziz, A. H. and Zhang, W. (2019). *Can Islamic social finance be the key to end poverty and hunger?* World Bank Blogs. March 27

Al-Albānī, M. N. (1988). *Sahīh al-Jāmi' al-Saghīr*. Beirut: al-Maktab al-Islami.

Alalwani, T. J. (2000). *Tafsīr al-Qur'ān bi-al-Qur'ān* [The Exegesis of the *Qur'ān* by the *Qur'ān*]. Herndon: The International Institute of Islamic Thought.

Alarnaut, M. M. (2018). Toward an Active Role of *Awaqf* in the life of Contemporary Muslim Societies. *Journal of King Abdulaziz University*: *Islamic Economics*, 31(3), 33-58.

Al-Ghazālī, A. Ḥ. (1993). *Al-Mustaṣfā' fī 'Ilm al-Uṣūl* [The intermediary on the methodology of jurisprudence]. Beirut: Dar al-Kotob al-Ilmiya.

Al-Haithamī, N. (2009). *Majma' al-Zawāid wa Manba' al-Fawāid*. Beirut: Dar al-Kotob al-Ilmiya.

Al-Ṭabarānī, S. (1979). *Al-Mu'jam al-Kabīr*. Baghdad: Ministry of Awqaf.

Al-Zarqa, M. (1993). *Sharḥ al-Qawā'id al-Fiqhiyah* [Explanation of the maxims of jurisprudence]. Damas: Dar al-Qalam.

Azar J., Schmalz M. C. and Tecu I. (2018). Anticompetitive Effects of Common Ownership. *Journal of Finance*, 73(4), 1513-1565.

Belabes, A. (2021). Investigation into the Genesis of the Cash Waqf. *Awqaf Journal*, 41, 13-40.

Belabes, A. (2022). The alternative benchmarking in reference to Taylor's rule: A critical review of a conceptual note. *Researches and Applications in Islamic Finance*, 6(1), 1-13.

Benabi, M. (2002). *Fī Mahab al-Ma'rakah* [In the breath of battle]. Damas: Dar al-Fikr.

Berque, A. (2016). The Perceptive Relation in Mesology: From the Functional Circle of Uexküll to Trajection. *Revue du MAUSS*, 47(1), 87–104.

Bouleau, N. (2013). Can there Be Excessive Mathematization of the World? In: Dalang, Robert C., Dozzi, Marco, Russo, Francesco (eds) *Seminar on Stochastic Analysis, Random Fields, and Applications VII*. Part of the Progress in Probability book series (PRPR, volume 67). Basel: Birkhäuser, 453-469.

Bouleau, N. (2017). *Penser l'éventuel. Faire entrer les craintes dans le travail scientifique*. Paris: Éditions Quæ.

Bouleau, N. (2018). *Le mensonge de la finance, Les mathématiques, le signal-prix, et la planète*. Paris: Les éditions de L'Atelier.

Buchter, H. (2020). *BlackRock - Ces financiers qui s'emparent de notre argent*. Paris: Massot Edition.

Chevalier, J. (1948). Hommage à Unamuno, in *Cuadernos de la Cátedra Miguel de Unamuno*. Salamanca: Universidad de Salamanca, 1, p. 13.

Codron, C. (1913). Quelques notes à propos du mot résilience. *La Machine moderne*, 80, 196-198.

Danan, M. (2008). La résilience un concept à clarifier. *Bulletin de l'Académie des sciences et lettres de Montpellier*, 39, 71-83.

Dardot P. and Laval C. (2014). *Commun. Essai sur la révolution au XXIe siècle*. Paris: La Découverte.

Descola, P. (2019). *Une écologie des relations*. Paris: CNRS éditions.

Diamond, J. (2004). *Collapse*: *how societies choose to fail or succeed*. New York: Viking Press.

Djian, J.-M. (2020). *Ivan Illich* : *L'homme qui a libéré l'avenir*. Paris: Seuil.

El-Messiri, A. (2009). *Ḥiwārāt al-Doctor Abdel Wahab El-Messiri*: *al- Ṯaqāfah wa al-Manhaj* [Discussions with Dr Abdel Wahab El-Messiri: Culture and Method]. Interviewed by Susan Harfi. Damascus: Dar al-Fikr, p. 311.

Gambino, M. (2012). Is it Too Late for Sustainable Development ? Dennis Meadows thinks so. Forty years after his book The Limits to Growth, he explains why. *Smithsonianmag.Com*, March 15.

GIEC (2014). *Changements climatiques 2014*: *Rapport de synthèse*. Genève: Groupe d'experts intergouvernemental sur l'évolution du climat.

Girard A. and Schéou B. (2013). Quelle pauvreté réduire ? Le problème de la réduction utilitariste de la richesse. *Etudes caribéennes*, 24-25, April-August.

Godelier M., Paty M. and Pfefferkorn R. (2014). Anthropologie: invariants structuraux et transformations. Lien à l'histoire et rôle du sujet. *Raison Présente*, 188, 69-83.

Goldstein, M. (2020). The Fed Asks for BlackRock's Help in an Echo of 2008. *The New York Times*, March 25.

Gramsci, A. (1975). *Quaderni del carcere*, edizione critica dell'Istituto Gramsci. Torino: Giulio Einaudi editore.

Guerrien, B. (2004). Y a-t-il une science économique?. *L'économie politique*, 22, 97-109.

Harari, Y. N. (2017). Dataism Is Our New God. *New Perspectives Quarterly*, Spring, 36-43.

Hart A., Hook J. and Dawes J. (2020). Embedding and Approximation Theorems for Echo State Networks. *Neural Networks*, 128, 234-247.

Hayek, F. (1945). The Use of Knowledge in Society. *The American Economic Review*, 35(4), 519-530.

Heidegger, M. (1993). La question de la technique, in *Essais et conférences*. Paris : Gallimard, pp. 9-48.

Hopkins, R. (2011). *The Transition Companion*: *Making your community more resilient in uncertain times*. White River Junction: Chelsea Green Publishing.

Ibn Abī al-Rabī', M. (1978). *Sulūk al-Mālik fi Tadbīr al-Mamālik* [The conduct of the master in the administration of the Kingdom]. Beirut: Manshurat Aouidat.

Ibn al-Azraq, M. (1977). *Badā'i al-Silk fī Ṭabā'i' al-Mulk* [The Wonders of State Conduct and the Nature of Kingship]. Baghdad: Editions of the Ministry of Information.

Ibn Khaldūn, A. (2001). *Al-Muqadimah* [The Prolegomena]. Beirut: al-Maktaba al-Asriya.

Illich, I. (2013). *Beyond Economics and Ecology*: *the Radical Thought of Ivan Illich*, prefaced by Jerry Brown, edited and introduced by Sajay Samuel. London & New York: Marion Boyars Publishers Limited.

Inalcık, K. (2007). Al-Dawlah al-'Uthmāniyah: al-Iqtisād wa al-Mujtama', in *al-Tarīkh al-Iqtisādi li-al-Dawlah al-'Uthmāniyah* [The Ottoman Empire: The Classical Age 1300-1600]. Beirut: Dar al-Madar.

Kuhn, T. (1962). *The Structure of Scientific Revolutions*. Chicago: University of Chicago Press.

Lakatos I. and Musgrave A. (1970). *Criticism and the Growth of Knowledge*. Proceedings of the International Colloquium in the Philosophy of Science, London, 1965. Cambridge: Cambridge University Press.

Larrère C. and Larrère R. (2020). *Le pire n'est pas certain. Essai sur l'aveuglement catastrophiste*. Paris : Premier parallèle.

Laurent, E. (2016). *Nos mythologies économiques*. Paris : Les liens qui libèrent.

Leroy-Beaulieu, P. (1900). L'Etat, la société et l'individu, in Léon Say et Joseph Chailley. *Nouveau dictionnaire d'économie politique*, Paris : Guillaumin, tome premier, pp. 943-953.

Lietaer B. and Kennedy M. (2008). *Monnaies régionales*: *de nouvelles voies vers une prospérité durable*, Paris : Editions Charles Léopold Mayer.

Massa M., Schumacher D. and Wang Y. (2020). Who Is Afraid of BlackRock?. *The Review of Financial Studies*, 1st September.

Meadows D., Randers J. and Meadows D. (2006). *Limits to Growth. The 30 Year Update*. London: Earthscan.

Meadows, D. (2012). Le mot décroissance, un suicide politique. Entretien réalisé par Sophie Caillat. *Le Nouvel Obs*, 21 juin.

Motesharrei S., Rivas J., and Kalnay E. (2014). Human and nature dynamics (HANDY). Modeling inequality and use of resources in the collapse of sustainability of societies. *Ecological Economics*, 101, 90-102.

Ockers, T. (2019). Ces financiers qui dirigent le monde [These financiers who run the world] - BlackRock, documentary broadcast by the French-German channel ARTE.

OECD (2020). *How Islamic finance contributes to achieving the Sustainable Development Goals*. Development Policy Papers No. 30. Paris: OECD.

Okun, A. (1975). *Equality and Efficiency*: *The Big Tradeoff*. Washington: The Brookings Institution Press.

Ostrom, E. (2020). Discours de Stockholm. En réception du Nobel d'économie 2009. Caen : C&F Editions.

Poincaré, H. ([1902]1968). La *science et l'hypothèse*. Paris : Flammarion.

Poincaré, H. ([1908]1947). *Science et méthode*. Paris: Flammarion.

Popper, K. R. ([1934]1959). *The Logic of Scientific Discovery*. London: Hutchinson.

Rahnema, M. (2003). *Quand la misère chasse la pauvreté*. Paris : Actes Sud.

Rapport Brundtland (1988). *Notre avenir à tous*, Rapport de la Commission mondiale sur l'environnement et le développement de l'ONU, présidée par Madame Gro Harlem Brundtland. Montréal: Les Éditions du Fleuve.

Renahy, M. (2019). *Là où est l'argent*. Paris: Les Arènes.

Rist, G. (2006). La supercherie du développement durable?. *4D L'encyclopédie du développement durable*, 21, 1-4.

Rist, G. (2018). La tragédie de la croissance, Interviewed by Marc Galvin Executive Director of the Research Office. The Graduate Institute, Geneva, August 21.

Sahlins, M. ([1974]2017). *Âge de pierre, âge d'abondance*: *L'économie des sociétés primitives*. Paris: Gallimard, collection Folio histoire.

Servigne P. and Chapelle G. (2017). *L'entraide l'autre loi de la jungle*. Paris : Les liens qui libèrent.

Servigne P. and Stevens R. (2015). *Comment tout peut s'effondrer ?* Paris: Seuil.

Sinaï A., Stevens R., Carton H. and Servigne P. (2015). *Petit traité de résilience locale*. Paris : Éditions Charles Léopold Mayer.

Steffen W, Crutzen P. J. and McNeill J. R. (2007). The Anthropocene: Are Humans Now Overwhelming the Great Forces of Nature? *Ambio*, 36(8), 614-621.

Summers L. H. and Summers V. (1989). When Financial markets Work too Well: A Cautious Case for a Securities Transactions Tax. *Journal of Financial Services*, 3, pp. 261-286.

Supiot, A. (2017). *Governance by Numbers*: *The Making of a Legal Model of Allegiance*. Oxford: Hart Publishing.

Temple-West P. and Khan M. (2020). BlackRock to advise EU on green regulation for banks. *Financial Times*, April 13.

Uexkülls, J. V. ([1934]1984). *Mondes animaux et monde humain*. Paris: Editions Denoël.

UNCTAD (2018). *Achieving the Sustainable Development Goals in the Least Developed Countries*. *A Compendium of Policy Options*. New York & Geneva: Publications of United Nations.

UNDP (2020). *Islamic finance partner*. New York: United Nations Development Programme.

Watsuji, T. ([1935]2011). *Fūdo, le milieu humain*. Paris: CNRS éditions.

Zwir, H. (2020). L'observateur, un défi pour la physique quantique. *Pour la Science*, N° 509, mars, pp. 24-31.