

ENVIRONMENTAL SUSTAINABILITY IN THE AFTERMATH OF A PANDEMIC: A STUDY BASED ON TRIPLE BOTTOM LINE APPROACH

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Abstract

Our world is rapidly changing, from hunter-gathering to farming to capitalism, economic globalization, and political difficulty. It is vital to consume our scarce resources in a sustainable manner since people have always been consumers rather than replenishes of the earth's natural resources. By definition, sustainability is known as the capability of current genesis to fulfill their requirements without jeopardizing the prerequisite of generations of the future ability to fulfill their own. Expressing in other words, it providethe ability of humans to live in harmony with the ecosystem on our planet. Environment sustainability as a conspicuous element of sustainability approaches towards steering definite resources to curb down the transforming resource as well as curtail down generated wastage by providingenvironmental and naturally generatedsources a protection sheet. These recent catastrophic circumstances have been the cause for the authors to rethink their understanding of their concept of sustainability. The COVID-19 pandemic has had a profound impact on human sustainabilitythrough "triple bottom line (TBL)"approach consisting of pliers like "economic, social, and environmental". The research on COVID-19 and its long-term consequences is notably fragmented, owing to a growing interest among academics in acknowledging to the pandemic's immediate call for

action implementing a concept known as the triple bottom line strategy is one way to achieve these future sustainable developmental goals.

Keywords: Environmental sustainability, Social sustainability, Pandemic, Public health, Triple bottom line

1. Introduction

“The needs and priorities of particularly vulnerable nations should not be overlooked by a global agenda on environmental sustainability” ---- UN

COVID-19, a novel coronavirus disease, was declared to be a community emergency against their well-being of the concern internationally by World Health Organization (WHO) in January 2020. With these exception of supermarkets and pharmacies, this outbreak is currently forcing the temporary closure of all non-essential establishments and services in numerous nations around the world. Since cities have been shut down, countries with high-risk personnel which have been compelled to do “work from home”. Curfews was imposed in a number of countries to prevent the virus from spreading, suggesting an unprecedented disruption in trade. In the areas of “health, safety, supply chain, labor force, cash flow, consumer demand, and marketing”, firms are facing the varieties of challenges (WHO, 2020). Thousands of people die every day as a result of the virus's symptoms, bringing the world to a halt and forcing us to reevaluate what constitutes a future of sustainability in the globe and humanity. This new catastrophic circumstances forced the researchers to rethink their understanding of their concept of sustainability. The COVID-19 pandemic has had a profound impact on human sustainability's economic, social, and environmental pillars. The research on COVID-19's long-term consequences is notably fragmented, owing to a growing interest among academics in acknowledging to the pandemic's immediate call for action. As a result, there is currently no comprehensive assessment of COVID-19's implications for sustainability measures. The impact of “COVID-19” on the basis of “triple bottom line (TBL) of sustainability” will be investigated in this study in order to aid future sustainable development goals.

1.1 Rethinking the concept of sustainability

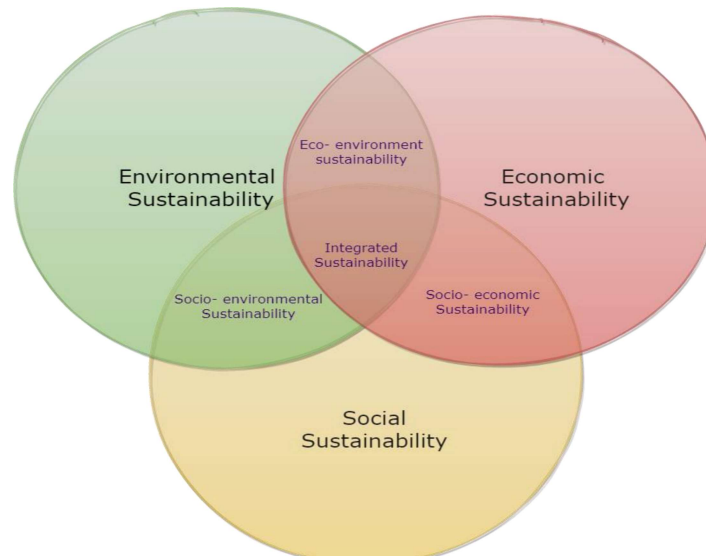
Prior to pandemic, the world's complete focus was on growing environmental and social concerns, which most of the researchers think that it is the outcome of troublesome economic policy making for global- trade and commerce. Sustainability is an approach that is used to lead economic activity and development into balance and establish accountability. The current definition has been derived from the 2005 World Summit on Social Development, based on three pliers of long-term development

(A/RES/60/1.2005). Since then, the three aims of development of economic, social and environment protection has been serving as the basis for a number of sustainability standards and certifications. The proposal has been favorably received by all stakeholders in the corporate and public sectors (Munoz-Pascual,2019) The“United Nations approved 17 Sustainable Development Goals” in 2015 as a dialogue and awareness to sustainability developed, ensuring that no one is left behind in our society's prosperity. There is no poverty; there is no hunger; there is good health and well-being; there is high-quality education; there is gender equality; there is safe drinking water and sanitation. Add to this Clean energy that is affordable; Job creation and economic growth; Infrastructure, innovation, and industry; Inequalities are being narrowed; Communities and cities that are sustainable; Conscientious consumption and production; Climateaction; Life under water; Life on land; Peace, justice, and strong institutions;Partnerships for the goals (United Nations, 2020). Filling current demands without risking future generations' ability to meet their own needs is the mostly popular definition of sustainability (UN, 2020).

In the pre Covid scenario, the aim of the governments and communities as a whole have developed the mindset of sustainable development to cope up with the losses borne by everyone directly or indirectly. The ecologies have been started to become degraded which in future times prove to be difficult to deal with. It has been studied that it is expensive to get rid of the waste generated and rather it should be opted to not yield at the first place because it is cheap to deal with. Sustainable development does not only restrict itself to the near future but also to upcoming generations of the century as the whole which relate to changes in upcoming production models and also changes in social responsibilities of individuals and communities as a whole. (Hudson, B.2010)

Entrepreneurship and economic development with respect to sustainable development is a big task which is the target through “triple bottom line approach (TBL)”. New startups or entrepreneurs find the difficulty to maintain thisidea of sustainable development along with the ideas of their new business. China has not seen much of a rise in its growth rate since 2015. The businesses can get foreign direct investments with the change in their policies with the growing need of sustainable development. There has been seen a relationship that economic growth and pollution promote each other which seem to be a difficulty in environmental sustainability at this stage of growth. Influences on entrepreneurship also depend on the surroundings and the favorable and unfavorable conditions of trade. Foreign direct investments are also a cause of pollution reduction because they result in higher technology which results in producing less waste and lessens the pollution as in whole. They are also a cause of social improvements in the society.(GU, W.2020)

Fig: 1 Concept of triple bottom line (TBL)



Source: Ranjbari et.al, 2021

TBL was created by Elkington (1997). The phrase had limited meaning prior to the late 1990s. A basic Google frisking for TBL now returns nearly three million results, up from 52,400 in 2004. TBL is just another construct that expresses the environmental agenda's expansion along economic and social lines. TBL is a methodology for assessing company performance and organizational achievement across economic, social, and environmental dimensions. In practice, the term has been referred to as the sustainability framework. The TBL agenda, which is geared toward enterprises, emphasizes the economic, social, and environmental benefits in a consistent and balanced manner.(Publishing. 2015)

1.2 Covid- 19 has a long-term impact on the environment.

The present pandemic has resulted in the deaths of hundreds of thousands of individuals. The economy has sunk to new lows as a result of COVID-19's spread, social problems likein house abusesbecomes worsened, worldwidenatural creatures have begun to beperish as a result of environmentalists quarantining themselves from the virus. Furthermore, due to the cancellation of activities that were believed to make money for protection and conservation efforts, conservation funding is at an all-time low (Supporting Conservation). A flurry of images and videos of animals wandering the local streets have surfaced on social media as a result of a drop in human activity. Many people hail COVID-19's animal liberation as a victory; nevertheless, this seems to bedelusionas the species most in danger of extinction since those require relentless support of mankindfor survival. These organisms are currently on their own for survival. For example, around Mount Kilimanjaro in Africa, a substantial ecotourism business supports extensive conservation initiatives (Simon, M). While most people feel that human

activity is harmful to the environment, non-destructive human activity can be just as important for certain species' survival as food and water.

Elkington (1998) established the triple bottom line (TBL) awareness to motivate and invoke sustainable development adoption due to the vague and complex nature of organizational sustainability. This triple bottom line is based on the harmony on the three pliers of sustainability and at the same time from a microeconomic standpoint (Gimenez, C, et.al, 2012). The agenda meant for sustainable development as per agenda 2030, propounded by the "United Nations General Assembly" (UNGA) in the month of September, 2015 in a unified framework to address the triple bottom line sustainability. According to this schedule, there are overall seventeen "sustainable development goals" (SDGs) that urges ministry and trade by working together to accomplish them (Van der Waal, 2020).

1.3 Shock of Covid-19 on individual health

Aftermath of Covid-19 situation, the focus will be on the health care system and transforming it in a better and more equipped manner. Health has seen to be both social and economic issue which needs to be elevated in such a way that it promotes health, social development and economy together to bring out the core values of the society and also promoting sustainability. The aim of health system after pandemic is to attain a health security system in such a manner that universal health and human security is achieved. It is also necessary to guarantee that vital public health functions are strengthened, as well as national risk reduction and mitigation capabilities.

Another situation that has largely impacted human health during the pandemic is shortage of food. The countries either have labor intensive based agriculture or machine intensive based agriculture, the countries with labor engaged have suffered more because of the lockdown restrictions. The food distribution system has been suffered lately and the poor and labor have suffered due to no jobs and lesser food availability. Decrease in incomes and increase in poverty has led to disturbance in the food distribution system and food security and nutrition.

There has been observed a situation of global crisis and inequality within people which has been seen tampering the nation's growth as well the sustainable development goals. The pandemic has brought a shake in the present set years of achieving targets which seems quite impossible to achieve with the increasing uncertainties of the pandemic. (Moriarty, P, 2020)

The environmental sustainability is not only related to environment and the surroundings but also the human beings included in the environment. The human health plays an important role as they are considered to be the wealthiest asset and are the most important contributors in sustainability management.

Covid-19 has been a turning point in the way of outlook for future ethics in the humanity levels. It has also been completely different for socio economic growth platform which will result in supply side changes. These changes are not only restricted to human growth and health but also green growth of the economy(Taherzadeh,2021).

2.0 Literature Review

Amoah, Joseph (2020) enlightens the pressure for green practices in the running of the business given by either the government or the stakeholders of those firms. The recent rise in air traffic as well the increasing dependence of people on airlines for travelling has increased the competition of airlines. Amidst covid-19 the biggest challenge stands of keeping the prices lower and challenging carbon targets. There exists dual need of environmental concerns and health safety for people in this pandemic to be taken care by airlines.

Yang (2020) highlights the failure of the democratic and autocratic governments all over the world. The governments failed in controlling the explosion of cases in their respective countries. The outbreak could be controlled with better leadership and administrative skills of the government. Later China was able to curb the epidemic from its country.

Goswami, Colrett, Primak (2020) shows the impact of covid-19 on studies and postponement of exams and delay in internship programs and training. There has been a halt in admission procedures as well. There has been observed a betterment in the climate conditions worldwide but these need to be carried for long term for biodiversity conservation.

Macro, Baker (2020) focusses on the emerging infectious diseases and its interaction with the environmental changes. It shows the linkage of the “sustainable development goals” as well as strategies that have given more focus about the achievement of those “sustainable development goals”. There exists a risk of these diseases on human health. The preparedness for the pandemic can strengthen the public health benefits.

Diffenbaugh, Field (2020) focusses in a study that shows there has been improvement of carbon emissions as the lockdown was imposed worldwide. The health effects of covid-19 will be long lasting and its effect on the poverty and employment worldwide has been a drastic one. Government is playing a significant role but it would be short lived. The analyses of Earth system can help in early detection of environmental risk and the degradation.

Zeng, Maxwell (2020) does a study which defines the relationship between sustainable development goals and actual conservation of biodiversity. The sustainable development goals are based on the quantitative aspects which sometimes are not enough for the evaluation of the total benefits. The assessment of results of SDGs have a great

significance in the framework of both national and international policies. Funding is also important for evaluation of results of the benefits of SDGs.

Zellmer, Wood (2020) gives a framework of how sustainable cities can be framed and developed in the upcoming years. It has also helped in multicity comparisons due to similar lockdown situations and wildlife siting due to shutdowns. There can be longer positive effects on urban wildlife due to lockdown and post lockdown effects such as work from home and lesser traffic situations.

Wilson (2018) relates that the low carbon innovation can lead to climate change mitigation. It helps in improving the existing product and work for the betterment of the climate along with the innovation in the market. It is not always that the companies working for better alternatives for environment for the existing products do not contribute in the climate change crisis rather they can preferably be the highest contributors as well. Disrupted market forces as well as high costs also play an important factor in such innovations

Barneveld, Quinlan (2020) does a study of how high-income countries were dependent heavily on imports and faced a heavy shortage for essentials. The greenhouse gases have been of a temporary relief due to impact of covid-19 which has led to betterment in terms of environment. There has also been a gender impact that has been observed that mortality rate of men is more than women. There has been a halt in development especially in African countries. Immigrants and the young workers are the worst affected and there needs to be change in the shape of development for upcoming years.

Carli (2020) analyses a study about how the pandemic has affected both men and women differently. The survey showed increasing unemployment rate for women than in men in the States. There has also been an increase in the time devotion for children due to shutting down of schools. The risk of the infection is more to women as they constitute more of the healthcare workers. Telecommunicating and work from home has both led to increase as well as decrease in work productivity as per the job variations.

Rondeau, Perry, Grimard (2020) elaborates the short-term impact of the covid-19. There has been an increase in poaching activities. There has been an increase in labour force food security concerns which would also increase in poverty levels. There has been a drop in prices due to decreasing demands whereas canned food packaged demand has risen sharply. There can be a complex bio economic system changes that can leave huge negative impacts.

Etienne, Fitzgerald (2020) focuses on how the health systems of a country can handle a pandemic globally. There has been an increasing need of health systems to be restructured in a way such that even they may contributing in the fulfillment to “Sustainable Development Goals” (SDGs). This is also opined that main need at the

aftermath of the pandemic will be bring safety and security to the vulnerable classes of the society.

Thu, Ngoc (2020) shows that how social distancing and lockdowns have been proven effective for the control of spread of the coronavirus. There has been a direct relationship between the lockdown measures and the decrease in the number of cases of the specific countries. This data was collected from top 10 countries with most cases in the outbreak. The cases were gradually seen deteriorating in numbers within two weeks of reaching its peak in the countries.

King, Rene, Novo (2020) assesses the wellbeing of humans in the socioeconomic system of an economy. To meet necessities and basic needs, there exist a number of social, economic and psychological factors that play an important role. In participatory qualitative research, each stage has its own importance which need to be studied carefully and then analyzed. This also highlights the potential risks and challenges in the various stages.

Laborde, Martin (2020) briefly studies how there has been a challenge in the access to food due to the rise in pandemic and losing of jobs. A greater impact can be observed on food security and nourishment levels especially for underprivileged and people below poverty line. It has also affected food production and supply side chains. Labor intensive countries are more adversely affected than capital intensive countries.

Luo, Tsang (2020) highlights the economic impact of the coronavirus in China as well as worldwide. The paper studies the labor levels including the labor share and the labor loss in the then ongoing pandemic and the relationship of it measured with sensitivity analysis. The analysis has been done so as to evaluate the supply shock from the spread of the virus.

Jackson (2020) does a study about the change in CO₂ emissions during the pandemic. The emissions were observed to be at lower levels due to the widespread lockdown, this effect might be effective till the reinforcement of complete activities. The major factors such as aviation and industries were shut down resulting in the lesser levels of emissions, but this relief is short lived due to re-opening of all the sectors after the subsiding number of cases in the world.

Ranjbari et.al (2021)investigates that in recent days, COVID-19, considered to be one of the world's most serious health hazard in 2020, has surged to the forefront of worldwide attention. The global economic slump has had little impact on an ample number of “businesses and industries” that is including “healthcare, travel and tourism, food and agriculture, education, energy, and mobility”.To counter this compelling need, it is required totake necessary steps to tackle this remarkable as well as extraordinary scenario created by this “COVID-19”tragedythroughout the world “economy” as well as

“societies” in such a brief time period, extensive research has been conducted in a number of sectors, resulting in a fragmented literature.

3.0 Research Questions

Research Question1: In view of COVID-19 implications, how far the investigation on the “triple bottom line (TBL) of sustainability” progressed?

Research Question2: In which way the “COVID-19” is influencing the “triple bottom line (TBL) of sustainability”?

4. Methodology

This present study is exploratory in nature that takes into account various “sustainable development goals”(SDG’s) which is the brainchild of the United nations, “triple bottom line (TBL) of sustainability” as well as the current post pandemic situation. This study is trying to find out the impact of pandemic in sustainable environment in changing scenario. It considers some diagrams to make a conclusion. It was requiring comparing the impact of COVID in pre and post period. But due to unavailability of data, it is very difficult to replicate current knowledge to measure and predict the impact on it. So, no other procedure is found appropriate to complete this study. This is also the scope of further research as well as shortcomings of this study.

This paper is exploratory in nature. This methodology of present research is by nature ‘descriptive’ and solemnly depends on ‘secondary sources’ compiled from various reputed resources. This include relevant books, data published by various organizations of repute, online sources available from internet published by various esteemed organizations, Government websites, Government literatures and various relevant research work published by researchers etc. For example, “Sustainable Development Goals (SDG’s)” has been collected from United Nations Sustainable Development. “United Nations Resolution” propounded by the UNGA, “United Nations (UN) General Assembly” etc. The research questions has been analyzed through charts and diagrams used by various researchers. Selection of these research questions, charts and diagrams has been selected based on various literature survey (Ranjbari, 2021; Dufлот, 2021)

The present study is trying to explain the research questions as well as fulfilling the basic objective, a systematic technique of assessing the literature (Ranjbari, Zanetti, 2021) has been considered which was explaining “triple bottom line (TBL) of sustainability” ideas and processes “in the context of the COVID-19 pandemic crisis”. Furthermore, prior to this current situation of epidemic, the literature consists of sustainability is independently examined in a systematic review manner to bring the primary sustainability issues that existed previously up to speed with COVID-19. Following COVID-19, identifying relevant research gaps and future research projects will be a lot easier. The subsections

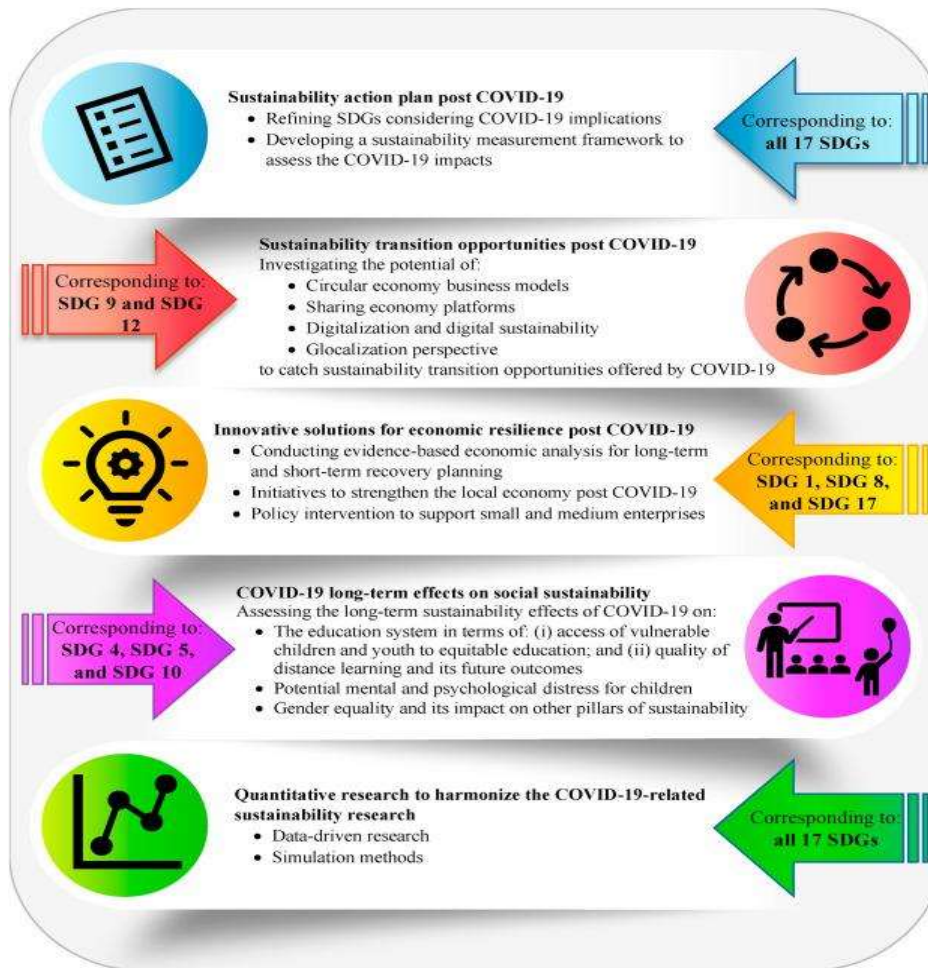
that follow outline the search technique and general review process that we used to filter and choose suitable papers for our investigation.

4.1 The research gap and directions: Schedules for “sustainable development after COVID-19”:

Following COVID-19, intensive analysis done through secondary sources revealed that the research agenda on sustainability and sustainable development needed to be updated. This section of the paper is trying to identify and analyze research gaps as well as trying to mention research plans to solve them. This is done on the basis of various findings collected from current inspection from various study, taking into account all barriers to “sustainability before COVID-19” as well as “recently created challenges by COVID-19”. Although sustainability faced obstacles prior to COVID-19, The COVID-19 has addressed hurdles which comprises “environmental issues, education system involvement in sustainability practices, mobilizing funds and investments” toward SDG fulfilment. This also creates “public health crises” caused by “healthcare pollution”. If we consider the limitations of this pandemic, on the other hand, have caused significant obstacles to many sustainability programmes as well as future sustainable development. If we summarize the research studies mentioned, then we came to know that those are fulfilling various “sustainable development goals (SDG)” that should be pursued are as follows: (i) a COVID-19-related sustainability action plan: “Refining sustainability goals and targets and developing a measurement framework”; (ii) Maximizing “COVID-19” that relates to sustainable transition opportunities: “focusing on responsible consumption and production (SDG – 12) and industry, innovation and infrastructure (SDG – 9)”; (iii) “Innovative solutions for economic resilience toward sustainability post COVID 19”: focusing on “no poverty (SDG – 1), decent work and economic growth (SDG – 8)”, as well as partnership to achieve the goal (SDG – 17) and (iv) a COVID-19-related sustainability action plan: “Refining sustainability goals and targets and developing a measurement framework” (Ranjbari et al, 2021).

Sustainability of this pandemic would consider on redefining SDGs according to the needs and wants of changes after the pandemic. It also requires assessing the measurement framework of sustainability to evaluate its impacts. The new business models along with the sharing economy platforms as well as the need of digitization and increasing awareness of digital sustainability need to be measured as a global perspective. Innovative solutions have become the need of the hour.

Fig:2 Possibilities for long-term sustainability and development



Source:(Ranjbari ,2021)

The necessity of policy intervention has been lately observed for especially small and medium enterprises because they have been the worst affected due to the pandemic. There is also a growing need of organizing economic investigation which is based on evidence for long run as well as short run reconstruction planning. The local economy has to be strengthened the most as a part of “sustainable development goals”. Corresponding to “SDG 4 (Quality education), SDG 5(Gender equality) and SDG 10(Reduced inequality)”, it has been observed that effects on social sustainability by Covid 19 such as on education system, gender equality and mental distress. The major highlight would be on providing access of education system to vulnerable children and youth and also for pertaining the quality “distance learning” and visualize the prospect in future. Its impact on gender equality and depending on it for other pillars of sustainability will process accordingly. With respect of all SDGs quantitative research has to be done to harmonize

COVID 19 related sustainability research via data- driven research and stimulation methods.

5. Conclusion

Triple Bottom Line (TBL) has been one of the attention-grabbing methods which goes hand in hand with sustainable development. The environment, people and profit are inter-linked. Business opportunities tend to be a major contributor in many global challenges in sustainable development such as contributing in climate change or enhancing the labor skills proficiency and contributing in framing new policies in newer ecological patterns and for better economic aspects. It has been observed that social factors mostly affect the economic factors in a positive way resulting in better understanding of the relation of the two given factors. (Muñoz-Pascual,2019)

Our present study has re - evaluated and examined the pandemic crisis' implications for human life sustainability using the TBL paradigm, taking into consideration social, environmental, and economic variables. The Ranjbari systematic methodology for literature review was used (2021)extensively to come to our conclusions. This study has also re-evaluated and examined the pandemic crisis' implications for human life sustainability using the Triple Bottom Line(TBL) paradigm by taking into consideration “social, environmental, and economic” variables those are the basis of this concept. It was found that if we consider the post /aftermathof COVID-19. Various researcher has been alsoutilized this approach to administera comprehensive look at this mail pedestal required for long run sustainable development like: Sustainability from environment front, Sustainability from social front and last but not the least, Sustainability from the economic front (Traxler, 2020).The implications, difficulties, and potential solutions of distinct pairwise crossings of these three pillars which includes “environmental and social sustainability”, for each pillar of the “Triple Bottom Line(TBL)” has been designed. In the brief span and scope all the assimilation which includes all these pilasters of sustainability, sustainability from environment front, sustainability from social front and sustainability from the economic front which in turn specify to “sustainable development” was incorporated. This study has also investigated other relevant factorsincluding socioeconomic and socio-environmental factors. A numerous research has done on these different aspects starts from environment, sustainability, and post pandemic issues. But the unique ness of this study is the amalgamation of the “Triple Bottom Line (TBL)” accessof “sustainable development” has done taking into view of thepost “COVID-19 pandemic implications”. This study is trying to frame a bridge between the “Triple Bottom Line (TBL)”, consequences of the “COVID-19” pandemicwith “ sustainable development goals” (SDG’s). In a nutshell “the consequences of the COVID-19 pandemic” outbreak on sustainability aspects in a variety of issue areas were compiled and presented “to highlight the COVID-19 effects on

sustainability”. In addition, separate post COVID-19 effects on the “sustainability dimensions” were integrated to judge the consequences on sustainability.

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