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Corporate Social Responsibility Policy in the Era of COVID-19 Pandemic: A Case of Nepal

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Abstract

The COVID-19 pandemic is the greatest global challenge faced since World War II. Nepal saw first COVID-19 infected case on 24th March, 2020. COVID-19 had already impacted in the human tragedy. The unique effect of the COVID-19 pandemic is that it once again forcefully pushed societal inequalities into public consciousness. It has provided both challenges as well as opportunities to companies and organizations with regard to their Corporate Social Responsibility (CSR). Mandatory CSR could work fulfil the gap wide range of stakeholders' needs created by the pandemic. This paper aims at investigating the rationale for the mandatory CSR in the era of Post COVID - 19 and contribute the CSR laws to direct how the law can prevent harms to the society beyond philanthropic initiative. The method adopted in this paper is the theoretical review of contextual pandemic situation, policy responses, the mandatory CSR policy of Nepal and other countries. The result shows that the mandatory CSR is humanitarian focused in the west and development in the east. Almost all the CSR laws are drafted with political interest thus, are not supported by regulatory and monitoring mechanism to measure the adequacy of implementation as per the legal requirements. Fighting against such pandemics will call for a joint effort of the corporate sector, government, and the stakeholders (including pandemic effected), and achieving readiness for corporate social responsibility.

Keywords: *Corporate Social Responsibility (CSR), Mandatory, COVID-19, Pandemic.*

Introduction

The outbreak of a novel coronavirus pneumonia, known as COVID-19, started in Wuhan, China, and spread rapidly and widely around the globe. On 11th March, 2020, the World Health Organization (WHO) declared it as a pandemic. The COVID-19 pandemic has had a major impact on the well-being of people and countries around the world, with major implications for public health, society, safety and the economy. As per WHO claims that, the virus had spread to more than 206 million confirmed cases with more

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than 4.3 million death tolls and hundreds of millions of suspected instances around the world. The rapidly spreading highly contagious Delta variant of COVID-19 is causing infections leading the world towards the third wave of the pandemic. The hope that the pandemic would soon fade away have been dimmed by the spread of the variant.

Nepal saw first COVID-19 infected case on 24th March 2020. The government took strict measures of suspending visa-on-arrival service for the residents of badly affected countries by COVID-19 in order to avoid any sort of contamination in Nepal. All the international flights were suspended from 20th March, 2020 onwards. The country reacted to the pandemic by enforcing country wide lockdown. It prohibited workers from work and consumers from consumption which in turn disrupted the circular flow of income of the country. The second wave infected Nepal, badly. The situation rapidly turned from bad to worse. The pandemic has not only affected the Kathmandu Valley but also different cities of the country both in the Hills and Terai. Even the rural areas are also getting affected. It did not even spare the remotest of the remote areas in the far-off villages. The 24 hours statistic of the COVID-19 maximum infection and death figure raised to the peak up to 9,317 infected and 225 deaths in a day. Ministry of Health and Population, Nepal statistics claims that the virus had spread to 803,566 confirmed cases with 10,239 death tolls.

The COVID-19 pandemic is the greatest global challenge faced since World War - II. It has spread across 213 countries, affecting the mobility of over one-third of the world population under some form of restriction as governments' effort to control the spread of the virus. Apart from the unprecedented attack on the global health system, COVID-19 has pushed the world into an economic crisis, with the International Monetary Fund (IMF) officially declaring a recession. The flows of goods and people have been severed and economic activities stalled. The virus has taken its toll on public health; disrupted supply chains; shut or threatened the survival of small and informal enterprises; and made people highly vulnerable to falling back into poverty through widespread loss of income and jobs. The short-term impact of COVID-19 is immediately and effortlessly felt, due to the widespread lockdown and social distancing measures globally. It is also assumed that this pandemic will have long-lasting profound economic, social, political, and cultural impacts.

Like other global events with planet-wide impact, COVID-19 had already impacted in the human tragedy of lost lives, broken families, and scarred communities, the economic and social changes driven by prolonged lockdown have caused the pain, personal, emotional, psychological, societal, economic, and cultural; and it leaves scars and might constitute a cultural legacy, which will live long in our memories and those of future generations. The unique effect of the COVID-19 pandemic is, it once again forcefully pushed societal inequalities into public consciousness. As countries, states, and cities began the lockdowns, the inequality was visible in the millions of newly unemployed who joined the long queues for social security benefits in the developed world (Scheiber, Schwartz, & Hsu, 2020). It was also apparent in the migrant workers in developing countries, walking hundreds of kilometers to their villages, carrying their meager belongings on their heads (Biswas, 2020).

COVID-19 poses challenges as well as opportunities to firms and organizations with regard to their CSR. Inevitably this crisis has put companies under the test for their commitment to ethical business conduct and CSR. As the disease disrupted socio-economic lives around the world, many large corporations had to close down or limit their operations (Jones, Brown, and Palumbo, 2020).

There are several examples of companies resisting of unethical business practices during this crisis and proactively engaging in various CSR activities. Firms going the extra mile to look after their stakeholders' interests - for example, UK manufacturing companies transforming their factories to produce ventilators, personal protective equipment, hand sanitizer, and so on, with some of them donating, instead of selling, these products. Tele-communications giant Vodafone introduced free access to unlimited mobile data for many of its pay monthly customers and upgraded its vulnerable pay monthly customers to unlimited data offer for free (BBC, 2020).

On the other hand, there are also numerous examples of companies conducting irresponsible business practice too – charging excessively high prices for products in high demand during the lockdown, lobbying to keep their factories or stores open in opposition to local restrictions, and making swinging cuts to their workforces, even while accepting government financial support. Amazon has been widely criticized on account that company is putting workers at risk with insufficient safety procedures in their warehouses – and then for firing workers that protested about it.

The people who were already vulnerable (physically or economically) face even more risks and uncertainties to their health, income, shelter, and other well-being. The first urgency is now the health and safety of human beings and to support the vulnerable people to be survived in society in every way possible. With the COVID-19 virus sweeping the world and disrupting lives, livelihoods, and communities, and putting enormous strain on public health as a whole, CSR must now play its part. Stakeholder theory has also been actively applied in the theory and practice of 'Corporate Social Responsibility' (Donaldson & Preston, 1995).

CSR is a form of corporate self-regulation integrated into business model. CSR is all about companies managing their business process to produce the overall positive impact on the society. It is connected with corporates behaving ethically, morally and socially responsible towards the society. CSR makes a significant contribution towards sustainability and competitiveness of the organization.

Thus, CSR refers to the continuing commitment by businesses to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large. It is a form of corporate regulation integrated into a business model. CSR policy helps a business by -

» developing a built-in, self-regulating mechanism whereby business would monitor and ensure its support to law, ethical standards, and international norms;

» embracing responsibility for the impact of its activities on the environment, consumers, employees, communities, stakeholders and all other members of the public sphere;

» promoting the public interest by encouraging community growth and development, and voluntarily eliminating practices that harm the public sphere, regardless of legality; and

» honoring of a triple bottom line, i.e. people, planet, and profit etc.

But, the debate since the 1970s is that whether companies should maximize the shareholder value or stakeholder's welfare (Friedman, 1970). The current result of COVID-19 pandemic has revived the issue, which necessitated the corporate sectors to reconsider their future business strategies for sustainable development of businesses considering their CSR. Now, the debate has focused on corporate objectives and how companies deal with amplified existing societal inequalities and vulnerabilities in recent years, especially, in the Era of the COVID-19 crisis. The pandemic encouraged companies and policy makers to consider ways to develop a more enabling institutional environment, not only to tackle the ongoing crisis but also to prepare for similar future tests (Zhao, 2020).

In a way the pandemic had presented companies a unique opportunity to analyze real time effectiveness of the CSR approaches. Instead of focusing on accountability mechanisms, as in the traditional emphasis of CSR laws, regulatory approaches may be introduced to assist companies to make plans and policies to manage the risks associated with the pandemic and in order to manage the overall uncertainty (Zhao, 2020).

CSR in Nepal has traditionally been seen as a philanthropic activity. It was an activity that Nepalese business communities performed but not deliberated, in the field of education, religion and supporting *Dharmasalas*, with food, cloth and amenities in the times of natural calamities. CSR were largely restricted to community development activities. The government of Nepal enforced a mandatory corporate social responsibility under the Industrial Enterprise Act-2020, Labor Act-2017, and the Environmental Protection Act-2019 necessitating the creation of CSR budgets every year, along with submission of CSR plans and programs; and progress report Nepalese corporate sectors are made responsible in their social responsibilities. Similarly, CSR regulation for banking has been introduced by NRB in FY 2016/17 for the first time. The Unified Directive issued by NRB for 2020, made CSR activities mandatory for the Banking sectors.

There has been a long-time debate over voluntary CSR or a mandatory. The inception of social responsibility of business entities which has become the modern CSR can be traced back to the World War-II. But its significant was not much felt until the 1960's and beyond. Milton Friedman (1962) a classical economists' argument against CSR that, businesses have a single duty of maximize profits for investors sparkled subsequent debates. He was of the opinion that social issues are not the concerns of business but that of the government; after all companies pay tax to the government for country development (Friedman, 1962). Admirers of mandatory CSR argues that, most of the societal problems such as pollution, destruction of natural beauty, accident, diseases are caused by companies, hence there cannot be any better panacea than companies themselves contributing to the welfare of the people (Japhet, Tawaih, & Benjamin, 2015).

The government perspective on CSR has been that though the corporate sectors generate wealth for shareholders, the country is struggling with the problems of poverty, unemployment, illiteracy and malnutrition. The gap between the corporates and the civil society has widened. With the mandatory CSR the Government seeks the business sector's partnership in developmental undertakings to ensure the distribution of wealth and the well-being of the communities in which the business operates.

However, the legal significance of CSR will likely continue to increase with the growing threats of climate change, biodiversity crises, and social inequality around the world. COVID-19 has brought unprecedented challenges for corporations as they attempt to manage negative impacts and mitigate future risks for their stakeholders and wider society. There has been very few research approaching this significant topic through the lens of corporate law, which may be used to redefine the focus of CSR in the era of the pandemic. This gap, which is created by the unique nature of CSR challenges and the complexity of sustainability issues affecting a wide range of stakeholders' needs to be filled through legal approaches. In this backdrop, this paper is an attempt to search the answer to the following questions:

(a) How can companies support society during a deadly crisis period like the COVID-19 pandemic disaster?

(b) What actions should be taken in the CSR laws for protecting employees, caring customers, and assisting communities beyond philanthropic initiatives of the companies?

Objectives of the Study

The general objective of this paper is to investigate the rationale for the mandatory CSR in the era of Post COVID -19. The specific objectives are as follows:

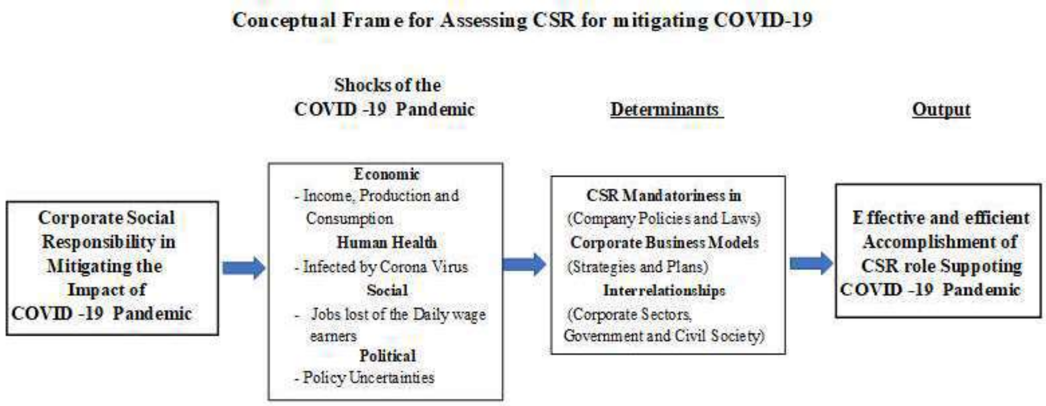
» to review the mandatory CSR laws and its implications in global context;

» to review the CSR policy and other mandatory CSR framework for addressing pandemic covid-19 in Nepal; and

» to contribute the CSR laws to direct how the law can prevent harms to the society beyond philanthropic initiative.

Methodology

Conceptual Framework of the Study



It is assumed that the mandatory provisions in the CSR Law would drive the corporate sector in investigating the contextual vulnerabilities for mitigating the shocks of COVID-19 — the economic, human health, social, and political. The rationale and functions of mandatory CSR and corporate laws along with business approaches and partnership should be examined through the review to introduce the improvement for responding to the current and crisis. It is assumed that such improvement would provide effectiveness and efficiency in accomplishing the CSR role at the time of crises.

Method

The method adopted in this paper is the theoretical review of the contextual pandemic situation, policy responses, and the mandatory CSR policy of Nepal, and other countries to identify the improvement required in the legal framework and corporate strategies for providing effectiveness and efficiency in the accomplishment of CSR role in crises. Thus, this paper is descriptive and explanatory based on reviews and fact-finding investigation.

Results and Discussions

Mandatory CSR Laws around the World

CSR is typically assumed as a voluntary initiative rather than a legal mandate (Alexander, 2008). But what actually the mandatory CSR is important to clarify before discussing whether or not CSR should be made mandatory. Internationally, different national systems (e.g., common law and civil law systems) have a different notion about the mandatories of CSR. Often, CSR legislation are observed in the form of labor law, environmental law, consumer protection law, human rights law, etc. Over the past few decades, the world has witnessed an emerging body of laws that specifically target corporations and incorporated CSR or its synonyms such as ‘business ethics,’ ‘corporate citizenship,' 'sustainability,' "ESG" (environmental, social, governance) (Andrew & Sarah, 2016). Before analyzing mandatory CSR in mitigating crisis like COVID-19 pandemics, it would be appropriate to explore how different countries are adopting mandatory CSR in terms of definition, motivation, implementation, and functions. This section of the paper reviews mandatory CSR laws adopted by the west, east and south-eastern countries.

In 2017, France adopted duty of vigilance law in which CSR is understood as a management process. As defined by United Nations Industrial Development Organization (UNIDO), CSR is 'a management concept whereby companies integrate social and environmental concerns in their business operations and interactions with their stakeholders. This a pioneering approach is gaining popularity in Europe.

The law required French companies with more than 5,000 employees in France, or more than 10,000 employees worldwide, to develop, disclose and implement a vigilance plan in order to identify risks and prevent severe human rights violations and environmental damage resulting directly or indirectly from the operations of the company, its subsidiaries or its subcontractors with whom it has an established relationship (Sandra, 2017). The plan should include a mapping of risks, regular assessment procedures, actions to mitigate risks or prevent serious breaches, and warning and reporting mechanisms. In case of non-compliance with the disclosure obligation, civil action might be launched to compensate the damages for corporate negligence by those who are harmed as a result of company's failure to establish or implement a plan. But France's duty of vigilance law provides little regulatory monitoring but relies on private actions for enforcement.

In France, there are three elements necessary to establishing breaches of disclosure obligation: i) damage, ii) a breach of duty, and iii) causation. The establishment of the breaches of disclosure obligation under the duty of vigilance law lies on victims. Since, the law does not consider harm as a breach of obligation, thus proving causes of harm would be a daunting task for victims (Stephane & Elsa, 2017).

This law has been enforced as a result of lengthy advocacy of the NGOs, trade unions, and left-wing parliament members against corporate irresponsibility related to globalization. The advocacy to 'establish a law that would give effect to the responsibility of parent companies for the actions of their subsidiaries abroad when the latter has a detrimental impact on the environment and human health' (Action Aid, 2017).

The term CSR is often used as synonymous with corporate charity. If CSR is voluntary by nature, corporate charity is likely the very inner core of a firm's voluntarism, where corporate donations raise the possibilities of window dressing merely to improve corporate image (Inger, 2008). Such CSR could be viewed as mandatory corporate philanthropy, mandated for building public relation management. In such CSR modality, companies require to commit a certain percent of their profits to designated CSR programmes. Mauritius is the first country that adopted mandatory corporate philanthropy. India and Nepal followed suit and Nigeria is currently deliberating over such legislation (Li, 2019).

In 2009, the Mauritius government enforced a mandatory CSR by amending the Income Tax Act - 1995. The amendment requires all profitable companies to contribute two percent of their preceding year's profits towards CSR activities (Renginee, 2015). Justification for such step was that the government viewed national development as a joint responsibility of the government and the private sector (Seegobin, 2016). The government issued CSR framework in 2016. Under this scheme (effective from October, 2019), every profitable company in a year is required to set up a CSR fund equivalent to two percent of its chargeable income of the preceding year, and at least seventy-five percent of its CSR fund shall be remitted to the Ministry of Finance (Mauritius Revenue Authority, 2019). After remitting the required amount to the National Social Inclusion Foundation (NSIF), companies are allowed to manage the remaining CSR money according to their own CSR policies. Since, small and medium-sized companies have only limited resources and usually prefer to remit all their CSR money to the NSIF whereas larger are observed spending the remaining CSR funds through NGOs in their own CSR programmes.

NSIF whose council consists of representatives from the government, the private sector, the NGO sector, and academia is made responsible for managing the CSR fund. The fund is intended to channelized in priority areas such as poverty alleviation, educational support, social housing, assistance to persons with disabilities, environmental protection, etc. Without reliable monitoring and credible assessment, there are concerns about the extent to which the CSR programmes, whether carried out by the NISF or companies themselves, have fulfilled the purposes stated in the law (Renginee, 2015). The CSR in Mauritius, was opposed in the basis that the mandatory contribution of two percent of profits to CSR activities is a kind of levy, which might negatively affect the attraction of foreign investment and might be disadvantage in competing in international market for Mauritius companies.

The 'Companies Act – 1956' of India was clearly shareholder focused which was amended in 2009 as a corporate governance focused after Satyam scandal (commonly known as India's Enron scandal). The Indian business sector clearly opposed the proposal of a new law requiring companies to contribute at least two percent of their annual net profits to CSR. Finally, in 2013, Indian companies act shifted the focus from shareholder to consider the interests of a wide range of stakeholders, including employees, shareholders, communities, and the environment (GoI, 2013).

Section 135 of the Act is a mandatory CSR provision which requires large companies (defined by net worth, turnover, or net profit) to spend in every financial year at least two percent of their average net profits made in the preceding three years on qualified CSR programs. Each company subject to Section - 135 shall establish a CSR board committee composed of three or more directors, and at least one of the committee members must be an independent director. The committee shall advise the board on how to spend the CSR fund and monitor the implementation. If the company fails to spend the requisite amount, the board shall explain the reasons for the non-compliance in the annual report (Indian Companies Act, 2013).

The CSR expenditure law has attracted great criticism in India. It is the battle is between businesses and NGOs. Civil society organizations are particularly worried by business encroaching on their areas. From the political right view and the businesses view mandatory, CSR taking a form of tax which is against economic liberalization. While those from the left claim that the approach does not go far enough to solve inequality problems in India (Karnani, 2013). The act mentions CSR several times, but no definition is given. The government's focus is on programmes to eradicate hunger and poverty; to promote education and gender equality; to assist rural development projects' etc. through specifies qualified CSR activities.

South African approach of mandatory CSR tries to balance the interest of various stakeholders while doing business. It is a kind of structural approach of mandatory CSR, where employees have their representation at the board of the business. In 2004, the South African government published a policy paper that kicked off an extensive overhaul of South African corporate law. The document emphasized the alignment between corporate purposes and societal objectives (Sulette & Tronel, 2014), and in 2008 South Africa adopted a new company act, aiming at 'promoting compliance with the Bill of Rights as provided for in the Constitution' as well as to 'reaffirm the concept of the company as a means of achieving economic and social benefits' (The South Africa's Companies Act, 2008). The new company law provided authority of regulating and prescribing a category of companies that must each have a social and ethics committee based on (i) annual turnover; (ii) workforce size; or (iii) the nature and extent of the activities of such company if it is desirable in the public interest to the Department of Trade and Industry.

Amendment of the Company Act in 2011 and the Companies Regulations (2011) further elaborate the composition, mandate, and powers of the social and ethics committee. The regulation made the committee of three directors responsible for monitoring the performance of the company in the following areas - i) Social and economic development; ii) Good corporate citizenship; iii) The environment, health and public safety; iv) Consumer relationships; and v) Labor and employment. In practice, corporations treat the social and ethics committee as a board committee composed of a mix of executive and non-executive directors. Some companies may include non-directors on the board like human resources executives (ILLOVO, 2014).

Despite initial reaction of the business sector in South Africa was cautious, and businesses implemented the committee requirement reluctantly, a survey conducted in 2009 on the relevance of establishment of the a social and ethics committee, shows almost all the state-owned enterprises and listed and public interest companies in South Africa now have a social and ethics committee in place though, slow adoption at the initial stage (Rossouw, 2018). But until now, scholars' debate is focused on whether and how the existence of the committee helps CSR performance which is still unclear, and on the status of the committee and its relationship with the board of directors.

Recent evolution of CSR has shown mandatory CSR as a part of comprehensive system of daily business management, is a legal duty of corporates. Such duty is often incorporated under corporate laws. The mandatory CSR modality of China and Indonesia illustrates legal duty modality, where CSR is a corporate obligation rather than merely part of directors' fiduciary duty.

In China, CSR development is a state centered where a central role in advancing CSR is played by the state. It is motivated by the notion that the state (Chinese Communist Party) is not simply economic, but more importantly, political. The party-state views CSR helpful to 'social harmony' and ultimately, its ruling stability (Li, 2010). The Chinese Company Law - 2006 reinforces employee participation in corporate governance by requiring that at least a third of the supervisory board members be employee representatives (Company Law of the People's Republic of China, 1993). However, empirical evidence often suggests that employee participation through the supervisory board is merely superficial (Li & Hao, 2006). Article - 5 of the law provides that 'in doing business', a company shall comply with laws and administrative regulations, conform to social morality and business ethics, act in good faith, subject itself to the government and the public supervision, and undertake social responsibility' (PRoC, 1994).

After the enactment of the CSR provision (i.e., Article - 5), Chinese law scholars have different interpretations about the nature of the CSR provision in terms of the statutory language of the article. Because the corporate statute does not provide any definition for CSR or any remedies in case of non-compliance, they argue that so-called mandatory CSR provision is purely an ethical obligation without legal enforceability. They further argued that the CSR provision is a fundamental principle of corporate law; as a fundamental principle, it shall be mandatory in nature and be applied to interpretations of all provisions throughout the statute (Chen & Wang, 2011). On the other hand, Chinese courts used the CSR provision as an additional legal basis to require companies to comply with laws. The courts viewed maintaining 'social stability' as part of CSR. China's political institutions play an important role in this 'social stability' interpretation of CSR. The Chinese government (Chinese Communist Party) suppresses any social unrest that would possibly threaten its ruling stability. Overall, except for a few judicial cases and specific CSR-related regulations, the CSR law (i.e., Article - 5) as a corporate behavioral standard, is largely de facto voluntary, despite the mandatory tone of the statute (Li, 2019).

Indonesia, after being independent from Dutch colonial control in 1945, the Indonesian government need of nationalizing Dutch businesses to gain economic sovereignty started with the initiative of mandatory CSR on state-owned enterprises (SOEs). Starting from 1999, every Indonesian SOE is required by law to allocate four percent of their profit to partnerships with small and medium enterprises and environmental management programs (Sinaga, 2017). The enactment of Article - 74 of Limited Company Liability Act No. 40/2007, has provisioned: i) A limited liability company that carries out business activities in natural resources sectors or in connection with natural resources is obliged to implement corporate social and environmental responsibility; ii) The social and environmental responsibility undertaken by the corporation shall be budgeted and calculated as expenses of the company and its implementation must be undertaken by considering appropriateness and reasonableness; and iii) Failure to implement the CSR obligation will incur sanctions in accordance with further regulations (RoI, 2007).

Indonesian business sectors were against the mandatory CSR law. They argued that the law violated the principle of legal certainty because the CSR mandate would contradict the voluntary nature of CSR and essentially amount to double taxation. But the court supported the CSR law by saying that CSR is a legal obligation, as opposed to a voluntary initiative, provides more legal certainty, not less. The court also distinguished between taxation and CSR spending. According to the court, tax levies are used for national development, while CSR funds are used for communities and the restoration of the environment where the company is located (Rosser & Edwin, 2010). Only in 2012, the regulation for CSR was released, which delayed the implementation of the CSR activities.

The regulation holds the board of directors responsible for the practical details of CSR implementation, including the preparation of annual CSR operations plans and budget plans. The regulation vaguely explains the meaning of 'appropriateness and reasonableness' as being 'the financial capacity of the company having regard to the risks that give rise to the social and environmental responsibilities that must be borne by the company, subject to the obligations of the company as set out in the legislation governing the company's business operations'. Article - 3 of the regulation provides that 'CSR shall be mandatory for companies that carry on business in the natural resources sector or related fields, where such CSR obligations are imposed by a specific sectoral statute' (RoI, 2007). Thus, CSR has been implicitly regulated by other laws and regulations. As a result, the CSR obligation under Article - 74 of the Limited Liability Company Act turns out to be no more than a legal obligation to comply with existing laws and regulations.

To summarize, although the mandatory CSR is humanitarian focused in the west and development in the east, implementation of the law seems a daunting task. On the one hand, the laws are facing a strong opposition from the business sector, and on the other, the governments are often motivated more by political self-interests than by the pursuit of social / environmental justice. Thus, be it a French duty of vigilance law, the Chinese 'social stability', African new company Act, or Mauritius, Indian and Indonesian CSR Law, mandatories of the CSR activities are not supported by regulatory and monitoring mechanism to measure the adequacy of implementation as per the legal requirements. Besides politics, the inherently open-ended nature of CSR leaves great room for manipulation. Consequently, the mandatory CSR laws permit superficial implementation. However, the mandatory CSR legislation is increasingly adopted by many countries around the world with the increasing threats of climate change and pandemics like COVID - 19, which resulted in social inequalities. The present challenge is to make mandatory CSR, legally effective.

Mandatory CSR Policies in Nepal

The overall CSR penetration in Nepal is quite low with many corporations not familiar with its broad concept. Majority of the CSR activities in Nepal are socially driven projects that help to empower marginalized communities. With the enactment of the Chapter-9, Section - 48(1), Industrial Enterprise Act – 2016, and its Regulations-2019, the mandatory CSR is now set for implementation in Nepal. The act mandated the CSR requirement to certain industries on the basis of fixed capital investment and annual turnover, explained in the table below:

Table 1: CSR Requirement for Industries

<table>
<tr><th>Types of Industry</th><th>Fixed Capital Investment</th><th>Annual Turnover Requirement</th><th>CSR Fund to be allocated</th></tr>
<tr><td>Small Scale Industry</td><td>Less than NPR 100,000,000</td><td>Greater than NPR 150,000,000</td><td rowspan="3">At least 1% of annual profit</td></tr>
<tr><td>Medium Scale Industry</td><td>NPR 100,000,000-NPR 250,000,000</td><td rowspan="2">No minimum turnover requirement (i.e., all medium scale and large-scale industries should allocate fund for CSR activities)</td></tr>
<tr><td>Large Scale Industry</td><td>Greater than NPR 250,000,000</td></tr>
</table>

Source: Industrial Enterprise Act (IEA) 2016, Nepal.

The law made all medium and large-scale units and small-scale units with a turnover of Rs.150 million are obliged to allocate minimum one percent of their net profits into CSR budgets every year. Failing to do so, they are liable to pay a penalty of 0.75 percent of their sales turnover. All companies have to submit CSR budgets, CSR plans and programs along with progress report of the previous year within three months after the lapse of the fiscal year (GoN, 2016).

Rule - 37 of the Industrial Enterprise Regulations (2019) categorically lists following eight areas where CSR budgets can be allocated:

i. Rescues and relief operations during the natural disasters;
ii. Community health;
iii. Preservation and promotion of cultural heritage;
iv. Livelihood and empowerment programs for the minorities and marginalized groups;
v. Support to community schools and universities;
vi. Environmental programs;
vi. Programs to control 'Social Bads' like smoking, drinking and other social ills;
vii. Rural drinking water; and
viii. Other infrastructure works.

Besides listing areas of CSR, the regulations also specify four conditions for implementing CSR activities. First, the companies have to allocate a minimum of 25 percent of their CSR budget in those areas affected by the business. Second, the companies have flexibility, not exceeding 10 percent of CSR budget, to allocate the money to a specific fund as designated by the official holding authority to register the company. Third, CSR programmes have to be implemented in coordination with the local-level. Fourth, the companies are barred from undertaking those CSR activities that directly contribute to increasing their profits (GoN, 2019).

It would be too early to measure the effectiveness of the mandatory CSR law since its regulation has just been enforced in 2019. But scholars and business sectors argue about the serious flaws and ambiguities which arises doubts on proper implementation of this new mandatory CSR policy (Manandhar, 2019). The argument basically is on the rationale behind the fixation of the mandatory CSR budget (1 % of net profits) and penalty of 0.75 percent of their sales turnover if fails to deliver the mandatory obligation. Penalty amount is significantly magnified. Business sector argues that it is unnatural to impose penalty to push company to do good things. Penalties are good for refraining companies from doing bad things. The good performance calls for rewards, not punishments.

The CSR Law have failed to take into account intended and unintended consequences of CSR policy decision. Besides, there is no clarity that CSR amount is tax deductible or not. Yet another debate is on the categorical listing of CSR activities. The companies are prohibited from spending CSR money on those activities that will help increase their profits or are related to business promotion and ‘a minimum of 25 percent of CSR budget to be spent on those areas impacted by the industry’. But the law has provided no elaboration in these confusions.

Besides industrial sector, the circular for bank and financial institutions (BFIs) issued by Nepal Rastra Bank in the fiscal year 2016/17 has mandatory directions for the **banks and financial institutions to create** CSR fund with at least 1 percent of their net profit. The circular has categorized sectors where the fund should be utilized. The sectors are like social projects, direct grant expenses, sustainable development goals or/and setting up a Child Day Care Center for employees. For non-compliance to the NRB circulars, both fine and imprisonment sanctions are defined according to Nepal Rastra Bank Act - 2002. The provision of CSR has been modified in 2020. BFIs were asked to contribute all unspent amount in their CSR fund to the Corona Virus Control, and Treatment Fund created by Government of Nepal (GoN). BFIs are also required to disclose CSR expenditures by CSR heads and provinces in their annual financial statements. Later in 2020/21 Nepal Rastra Bank include a separate heading for CSR activities with requirement of spending 5 percent of CSR fund in financial literacy in the Unified Directive. Following are the headings for CSR spending in the Unified Directive, 2020:

CSR Spending Heads (Unified Directive, 2020)

i. Social Projects:- It includes education, health, natural disaster, environmental protection, cultural promotion, infrastructural improvements in rural areas, increasing income earning capacity of socially backward class, consumer protection activities, bus stop waiting shed, street lights, and public toilets etc.

ii. Financial Literacy:- BFIs are required to spend 5 percent of the CSR fund in various financial literacy programs and targeted programmes to educate female and backward class regarding financial services in order to increase financial access.

iii. Direct Donation:- It is related to education and health for extremely poor people or organizations related to the extremely poor people.

iv. Activities Related to Achievement of SDGs

v. Expenses made for the prevention, control and treatment of employees against COVID - 19 and similar pandemics.

vi. Child Day Care Centre for employees of BFIs.

vii. Donation to Orphanage and Old Age Homes (except to the ones established professionally)

viii. Expense up to Rs. 100 in Open Bank Account Initiative, 2019.

Impact of COVID-19 and Corporate Sector

One of the major impacts of Covid-19 pandemic is that it has exposed and intensified some deep-rooted social issues like poverty and inequality. The general medical narration regarding susceptible of COVID -19 that it will not discriminates and people from different demographic backgrounds are equally susceptible to the illness. However, there are growing data showing Covid-19 does discriminate. Empirical data exhibits that the people from Black, Asian and Minority Ethnic (BAME) communities are more likely to contract the virus and become seriously ill or even die from it (Butcher & Massey, 2020).

The World Social Protection Report:- Social protection at the crossroads – in pursuit of a better future gives a global overview of recent developments in social protection systems, including social protection floors, and covers the impact of the COVID-19 pandemic. The report identifies protection gaps and sets out key policy recommendations, including in relation to the targets of the 2030 Agenda for Sustainable Development. It claims that currently, only 47 percent of the global population are effectively covered by at least one social protection benefits, while 4.1 billion people (53 %) obtain no income security at all from their national social protection system (ILO, 2020). Social protection includes access to health care and income security, particularly in relation to old age, unemployment, sickness, disability, work injury, maternity or loss of a main income earner, as well as for families with children.

The report claims that the financing gap (the additional spending required to ensure at least minimum social protection for all) has increased by approximately 30 percent since the start of the COVID-19 crisis. To guarantee at least basic social protection coverage, low-income countries would need to invest an additional US $ 77.9 billion per year, lower-middle-income countries an additional US $ 362.9 billion per year, and upper-middle-income countries a further US $ 750.8 billion per year that are equivalent to 15.9, 5.1, and 3.1 percent of their GDP respectively (ILO, 2020).

The impact of Covid-19 on the global economy is likely to be unprecedented since the 1930's Great Depression of the world (Euronews, 2020). Therefore, probably the Covid-19 pandemic represents one of the most significant environmental changes in the modern marketing history which could potentially have a profound impact on corporate sectors. However, the pandemic will end, it is already set to have long-lasting profound economic, social, political, and cultural impacts. This crisis has put corporate sectors under test for its commitment to ethical business conduct.

The financial strains, caused by the outbreak of COVID-19 might have pushed the companies to pursue short-term gains, due to lack of slack resources and mounting pressure for survival. Genuine and authentic companies might have viewed the crisis an opportunity to build stronger rapport among their customers and the general public by their efforts in combating the virus. This might have certainly made consumers feel proud of their brands helping their employees, donating money and equipment during the crisis. In reality, the pandemic has pushed many firms out of business, and if not to the brink of collapse. The best thing governments all over the world have done to mitigate the impact of the crisis is establishing economic aid packages particularly to those most vulnerable businesses like small businesses and tourism / travel / hospitality firms.

In Nepal, on 30th May, 2020, government also announced following measures and relief packages for the corporate sectors (GoN, 2020):

» Employers (industrialists and businessperson) in the formal sector will pay salaries to their workers even during the lockdown;

» Employers can access the organization-level welfare funds to make payments to their employees until the resumption of businesses;

» Tourism organizations will pay daily or monthly wages to their workers until *Chaitra* (last month of Nepali calendar);

» The Nepal government will deposit the amount contributed by workers and employers of organizations affiliated to the Social Security Fund for the month of *Chaitra;*

» Organizations and businesses affected by COVID -19 can pay the 'Income Tax' and monthly, bi-monthly or tri-monthly 'Value Added Tax' until 7th May;

» Documents to be submitted to the Company Registrar's Office and renewal of private firms can be done until 13th May; and

» Sugar mill owners must make complete payment to sugarcane farmers by 13th May.

The impact of COVID -19 pandemic is also observed in core marketing philosophies, mindsets, and concepts. The consumers, societies, and corporate sectors are likely to critically re-evaluate and question such philosophies and priorities of marketing in the aftermath of Covid-19. The pre-pandemic market standards, and seemingly incontrovertible metrics such as customer lifetime value, share of customer, and customer equity, are likely to be critically questioned. As mid-pandemic consumers were not driven by considered evaluations of varying brands or by long-run value or by future loyalty reflections, but were frustratingly constrained by limited choice, product accessibility, and immediate demand. Technologically, internet has become a lifesaving medium (quite literally in virus-tracking countries – particularly in Asia), communication means between buyers and suppliers immediately changed as lockdowns were imposed and travel restricted. Skype, Whats App, and Zoom (and a plethora of others) exploded in use and the digital age of online, mobile, and social media marketing went from pre-adolescent through a turbulent teenage right through to adulthood in matter of weeks. The adoption of technology replaced face-to-face interaction, as such, media commentators in the Japan Times, 2020 have suggested that the pandemic forced twenty years of technology adoption in twenty-four hours.

The pandemic has exposed businesses vulnerability to extraordinary external forces, such as the 'black swan event' (Taleb, 2008) of this pandemic. It has presented corporations with a variety of unforeseen challenges to tackle the need of their stakeholders in the post-pandemic period with a strong CSR commitment and effective CSR strategies and efficient implementations rather than lip services. On the other hand, the post- COVID-19 crisis offers significant opportunities for CSR, indicating its crucial role, during the medium and long run, particularly in contributing for normalizing, reinforcing, and reducing of economic inequalities in society (Bapuji, et al., 2020). The United Nation (UN) has made a call for efforts to build more inclusive and sustainable post Covid-19 economies that are more resilient in facing global challenges, such as pandemics, climate changes, and others, instead of going back to the world as it was before.

Currently governments across the world have increasingly been intervening in decision-making processes of the corporate sectors as a result of ongoing social, environmental, and financial turmoil. This has indicated the inadequacy of corporates sectors voluntary efforts of mitigating pandemic. Mandatory CSR could be justified as an urgency of addressing social and environmental challenges. Mandatory CSR is expected to facilitate the transformation of CSR norms from a narrow philanthropic responsibility-centered CSR to a more sustainability-motivated and strategy-driven one (Zhao, 2020).

Way Forward

Often, crisis tests a company's commitment to CSR. The mandatory CSR around the world, though legally obligated the corporations to implement for the benefit of stakeholders, their behavioral requirements are vague and weak in compliance mechanisms. As discussed above, France's mandatory CSR disclosure and due diligence; Indonesia's mandatory philanthropy for State-owned Enterprises (SOEs) and imposition of CSR duty on companies involved in the natural resources sector; China's corporations requiring to undertake a general CSR obligation and engage in CSR reporting; or Maldives, India and Nepal's mandatory corporate philanthropy; they all have 'political motivation' as a common denominator and lack strong regulatory mechanism for necessary compliance. It is obvious that these laws to generate substantial social or environmental performance as results and establish CSR norms will need precise behavior and rigorous enforcement.

The mandatory CSR Law in Nepal; it is too early to evaluate its performance. But as it is said 'morning shows the day', the initial CSR performance for example the number of trees being planted at the sidewalks and tagging the names of the sponsoring companies exhibits the starting of anomalies and absurdities in the name of CSR, when one is force to do something which have been already doing on a voluntarily basis. Besides, the law has barred the companies from undertaking those CSR activities that directly contribute to increasing their profits. Similarly, the survey conducted by Nepal Rastra Bank indicates that 45.6 percent of the respondents have ranked 'Image Building' as the number 1 driver of CSR. There is serious ambiguities and flaws in the new CSR laws regarding clarity in definition of the mandatory provisions.

The nature of CSR at the time of pandemic like COVID-19 should not be limited in fulfilling a philanthropic responsibility by engaging in a set of charitable activities. Rather, the sphere of CSR activities should be proactively expanded to minimize the negative impact of COVID-19 along with the turbulence that the pandemic has cause in the business environment. Thus, during the crises for mitigation and post-crisis calls for sustainable recovery plan both from the corporate and government level. Since billions of rupees have been funneled into COVID-19 relief fund in Nepal, it is the responsibility of the Government of Nepal, not large companies to safeguard citizens, protect the economy and support business. This does not mean that corporate social responsibility will disappear. The role of governments would be crucial in shaping unity and direction activities, setting the rules, enforcing standards, and providing financial support for the major transformations. Companies' role would be significant in tackling COVID-19-addressing recession and climate change involving in facilitating vaccines, producing PPE, protecting their customers and workers and more.

The COVID-19 pandemic has highlighted the vulnerability of supply chains in transportation, tourism, manufacturing, hotels, restaurants and smallholder farmers etc. in Nepal. It is critical for corporate sectors to consider their business priorities focused not only on surviving the impact of COVID-19 in the short term but also developing innovative and inclusive business models for post-pandemic era, considering less disruptive ways of running their companies. Steering conflicting stakeholders' interests in order to match with the corporate decision would be necessary. This could be achieved by including stakeholders in relationships with companies in order to maintain a good trade-off in the stakeholder to meet the particularly needs of vulnerable stakeholders as the result of the pandemic. The government would be responsible for not only strongly encourage companies to reconsider their CSR plans so that they can transform their priorities 'from surviving to thriving", but also create a legislative environment to convert "companies affected by the coronavirus back to sustainable success in a manner aligned with the interests of wider society' (Doz & Kosonen, 2008).

Thus, strategies to combat the crisis like COVID-19 very much depend on building and accelerating a kind of partnership between companies, government organizations and societies (stakeholders), with a renewed emphasis on environmental, economic, and social strategy alongside more effective ways to offer managerial guidance for long-term value creation. In partnership with governments and citizens, corporations are legally required or encouraged to voluntarily fulfil their shared responsibilities to contain the spread of the virus and mitigate its economic and social risks and impact (Zhao, 2020).

The next step in partnership between companies, government, and stakeholders would be to make companies 'CSR-ready' to mitigate vulnerabilities. The pandemic has opened the door to corporate sectors to understand the inequalities and an urgent need of support to the vulnerable stakeholders and the community, effected. It provided an opportunity to strike a balance between corporate power and poor accountability mechanisms, and re-build fading trust in corporations. The partnership helps companies to achieve CSR readiness- assuming the ownership of the results of their actions in response to stricter and more clear action-plan to fight the crisis from the government and the stakeholders. The pathway and an agenda will guide the CSR activities, and corporate decisions would be consistent with the stated purposes and objectives embedded in companies' constitutional documents. This could be termed as companies' "Corporate Social Competence". It should be developed and monitored through stakeholder participation and communication. Stakeholder demands would offer a precious opportunity to develop an innovative and meaningful legislative approach to CSR with well-designed components. Government encourages corporation for effective implementation of the CSR Plans.

Basically, such 'Corporate Social Competence' will affect at two levels. At the corporate board of directors' level and organizational level. As CSR activities are clearly prescribed in the corporate CSR policies based on the needs of the crisis effected, board members would be adequately prepared for socially responsible leadership. At the organizational level, corporations would be prepared for unpredicted social, environmental, and human rights challenges and continuously monitored by the stakeholders, in terms of their CSR policies. In the era of the pandemic, an understanding of mandatory CSR law needs to be supplemented by preventative and preparative measures. "Corporate Social Competence" will help companies to understand their mandatory CSR as a generalized societal concept.

Conclusion

An unprecedented challenge brought by COVID- 19 for corporations to manage negative impacts and mitigate future risks for their stakeholder and communities has increased the importance of mandatory CSR law. Only introducing restrictions and other government efforts alone might to be sufficient to cope the crisis during and post-pandemic. Since, the pandemic has already set to have long-lasting profound economic, social, political, and cultural impacts, the crisis has put corporate sectors under test for its commitment to ethical business conduct. The significance of mandatory CSR will continue to increase with the growing threats of climate change, biodiversity crises, and social inequality around the world.

Thus, it has been necessary to shift away the traditional approach of philanthropy centered CSR like in Nepal to strategic CSR. The pandemic forced corporate sector to use CSR strategy as a driver for competitive advantage, and reinforce this advantage in order to promote sustainability-driven multi-stakeholder approaches as avenues for ensuring medium- and long-term well-beings both to the corporate sector and the community. Fighting against such pandemics will call for a joint effort of the corporate sector, government, and the stakeholders (including pandemic effected), and achieving readiness for corporate social responsibility.

References

Action Aid France. (2017). *Peuples Solidaires, End of the Road for Transnational Corporations*? 6–7.

Alexander, D. (2008). *How corporate social responsibility is defined: An analysis of 37 definitions,* 15 CORP. SOC. RESP. & ENVT'L. MGMT. 1.

Andrew, C. & Sarah, G. (2016). *Researching corporate social responsibility communication: themes, opportunities and challenges*, 53 J. MGMT. STUD. 1223, 1223–25.

Andrew, R. & Donnie, E. (2010). *The politics of corporate social responsibility in Indonesia*, 23 PAC. REV. 1, 11–12.

Bapuji, H., Patel, C., Ertug, G., & Allen, D. G. (2020). Corona crisis and inequality: Why management research needs a societal turn. *Journal of Management,* 46 (7), pp.1205-1222. https://doi.org/10.1177/0149206320925881

Biswas, S. (2020). *Coronavirus: India's pandemic lockdown turns into a human tragedy.* BBC News, 30th March. Retrieved from https://www.bbc.com/news/world-asia-india-52086274

Butcher, B. & Massey, J. (2020). *Are ethnic minorities being hit hardest by coronavirus?,* The BBC, accessible at: https://www.bbc.co.uk/news/uk-52219070, accessed 18 April, 2020.

Chen, H. & Wang, X. (2011). Corporate social responsibility and corporate financial performance in China: an empirical research from Chinese firms, Semantic Scholara

Donaldson, T. & Preston, L. E. (1995). The stakeholder theory of the corporation: concepts, evidence, and implications*, Acad Manag Rev.* 20:65–91. 10.5465/amr.

Doz, Y. L. & Kosonen, M. (2008). *Fast strategy: How strategic agility will help you stay ahead of the game;* Wharton School Publishing: Harlow, UK.

Euro News (2020). COVID-19: *World Economy in 2020 Available* at: https://www.euronews.com/2020/04/14/watch-live-international-monetary-fund-gives-world-economic-outlook-briefing-on-covid-19, accessed 06 May, 2020.

Friedman, M. (1962). *The social responsibility of business is to increase its profits. New York Times,* 126. Global Impact (2009a). Workplace giving. Available at: http://www.charity.org/site/c.gtJUJfMQIqE/b.3416753/

Friedman, M. (1970). The social responsibility of business is to increase its profits. *The New York Times Magazine.* Available at: https://www.nytimes.com/1970/09/13/archives/a-friedman-doctrine-the-social responsibility-of-business is- to.html

GoN (Government of Nepal) (2016). *Industrial Enterprises Act - 2016*, Nepal Law Commission.

GoN (Government of Nepal) (2019). *Industrial Enterprises Regulation - 2019,* Nepal Law Commission.

GoI (Government of India) (2013), *The Companies Act -2013,* The Institute of Company Secretaries of India in pursuit of Professional Excellence, Statutory body under an act of Parliament.

ILLOVO (2014). *Social and Ethics Committee Rep*ort. http://www.annualreport.il lovo.co.za/Archive/2014/sustainability/social-and-ethics.asp

ILO (2020). *World Social Protection Report 2020–22*: Social protection at the crossroads – in pursuit of a better future, International Labour Office – Geneva: ILO.

Inger, L. (2008). *Philanthropy as public relations: A critical perspective on cause marketing*, 2 INT'L J. COMMC'N. 20, 20.

Japhet, K.; Tawaih, V.C.; & Benjamin, M. (2015). *Debate on mandatory corporate social responsibility,* paper presented at national seminar on strategies for Business Excellence in Global Era @ Haryana State, India on 21st March 2015.

Jones, L.; Brown, D.; & Palumbo, D. (2020). *Coronavirus: A visual guide to the economic impact.* BBC News. April 3. Retrieved from https://www.bbc.com/news/business-51706225

Karnani, A. (2013). *Mandatory CSR in India: A bad proposal,* STAN. SOC. INNOVATION REV.

Li-Wen Lin (2010). *Corporate social responsibility in China: Window dressing or structural change?* 28 Berkeley J. Int' L L. 64, 88.

Li-Wen Lin. (2019). *Mandatory corporate social responsibility legislation around the* *world: Emergent varieties and national experiences*, paper presented at UBC junior law faculty workshop.

Li, W. & Hao, C. (2006). *An empirical research of supervisory board governance in China's listed companies,* 2006 J. SHANGHAI U. FIN. & ECON. 78.

Manandhar, N. (2019). Whose responsibility? Published in the *Republica*, a daily newspaper on September 5, 2019, Kathmandu.

Mauritius Revenue Authority. (2019). *Guide on corporate social responsibility* (CSR).

NRB (Nepal Rastra Bank) (2020). Unified Directive–2020, Nepal Rastra Bank, Baluwatar, Kathmandu.

PRoC (People's Republic of China) (1994). *Company Law of the People's Republic of China,* 1994. Promulgated by the Standing Comm. Nat'l People's Cong., Dec. 298, 1993, arts. 55, 121, Westlaw China.

Renginee, P. (2015). *The changing nature of corporate social responsibility: CSR and development – The case of Mauritius.*

RoI (Republic of Indonesia) (2007). *The Law of the Republic of Indonesia* - 2007. Number 40 of 2007 concerning limited liability company.

RoI (Republic of Indonesia) (2012). *Indonesian Government Regulation* - 2012. Regulation No. 47/2012, Indonesia.

RoSA (Republic of South Africa) (2011). *The South Africa's Companies Act -2011.* 71 of 2008 and Companies Regulation.

Rossouwd, D. (2018). Ethics institute of South Africa, *The social and ethics committee handbook,* 2nd edn.

Rosser, A. & Edwin, D. (2010). *The politics of corporate social responsibility in Indonesia*, 23 PAC. REV. 1, 11–12.

Sandra, C. (2017). *The French law on duty of care: A historic step towards making globalization work for all,* 2 BUS. & HUM RTS. J. 317, 321–23 (2017).

Scheiber, N., Schwartz, N., & Hsu, T. (2020). White-collar quarantine over virus spotlights class divide. *The New York Times.*

Seegobin, R. (2016). *The source and growth of the NGO phenomenon in Mauritius*, Lalit Mauritius.

Sinaga, R. R. (2017). *The Indonesian government's role in the development of corporate social responsibility in Indonesia*, 103.

Stephane, B. & Elsa, S. (2017). *French corporate duty of vigilance law: A closer look at the penalties faced by companies.*

Sulette, L. & Tronel, J. (2014). *The legislative response to the shareholders V. stakeholders debate: A comparative overview*, 14 J. CORP. L. STUD. 211, 219–20.

The BBC (2020). *BBC Coronavirus: Vodafone Offers 30 Days Free Mobile Data',* 2020 accessed at: Https://www.bbc.co.uk/news/technology-52066048.

Taleb, N. N. (2008). *The black swan* in a 2007 before *2008 financial crisis,* Published by Yandon House, Allen Lane, US.

Xiaoxing, C. (2009). Rational consideration on the legal rule of corporate social responsibility: A comment on Article 5 of Chinese company law, *China commercial law annual–2009.*

Zhao, J. (2020). Reimagining corporate social responsibility in the Era of COVID-19: Embedding resilience and promoting corporate social competence. *Sustainability–2020,* 13, 6548. https://doi.org/10.3390/su13126548.