Abstract
The COVID-19 pandemic has not only posed unprecedented challenges to human health but has also significantly impacted various sectors, including zoological institutions. This study delves into the critical role of Corporate Social Responsibility (CSR) initiatives undertaken by zoos to safeguard both wildlife and society amidst the global health crisis. With zoos being forced to close their doors to the public for prolonged periods, the traditional revenue streams generated through visitor admissions have drastically diminished. This research explores how zoos strategically leveraged CSR initiatives to address the financial shortfalls incurred during the pandemic, thereby ensuring the well-being of the animals and the sustained engagement of the local communities. The study highlights diverse CSR contributions from corporate entities, ranging from financial support for zoo operations and animal care to the implementation of eco-friendly projects within zoo premises. It investigates how these initiatives have played a crucial role in sustaining the zoological ecosystems, mitigating the impact of the pandemic on wildlife conservation efforts, and promoting public awareness. Additionally, the research sheds light on the innovative ways in which corporations partnered with zoos to enhance visitor experiences, despite physical closures. Virtual engagement, online educational resources, and technological advancements became pivotal tools employed by CSR initiatives to bridge the gap between the public and wildlife during these challenging times. Through an in-depth analysis of case studies and the examination of operational data, this study aims to provide a comprehensive understanding of the significance of CSR in the zoo industry during the COVID-19 pandemic.

Keywords: Corporate Social Responsibility, COVID-19, Lockdown, Wildlife, Zoo.

Introduction
The COVID-19 pandemic has presented unparalleled obstacles for human societies and has greatly influenced wildlife conservation endeavors, notably those centered on zoos. As zoological parks worldwide grappled with temporary closures, reduced visitor numbers, and operational constraints, the imperative for corporate social responsibility (CSR) initiatives in safeguarding wildlife and engaging with society became more pronounced. The COVID-19 pandemic compelled zoos to adapt swiftly, implement innovative strategies, and collaborate with stakeholders to ensure the well-being of their animal inhabitants and continue their conservation and education missions. Behavioral changes in zoo animals during the COVID-19 pandemic have been a subject of significant study, highlighting the profound effects of the crisis on captive wildlife (Frost et al., 2022). The pandemic-induced temporary closures led to the virtual engagement of zoo visitors through social media platforms, demonstrating the "magic" of social media in maintaining connections during times of crisis (Ryder et al., 2021). Furthermore, the emergence of webcam travel as a means of connecting with nature during lockdowns underscores the importance of virtual engagement strategies in sustaining public interest and support for zoos (Jarratt, 2021). The COVID-19 pandemic also prompted shifts in social connection dynamics, with greater social connectedness during lockdowns associated with reduced distress and fatigue (Nitschke et al., 2021). Despite the challenges posed by the pandemic, zoos continued to play a vital role in fostering resilience and emotional well-being, particularly among children (Landman et al., 2023). In the realm of corporate social responsibility, the COVID-19 pandemic has brought to the forefront the importance of CSR in mitigating societal challenges. Scholars have examined the impact of the pandemic on CSR and marketing philosophy, emphasizing the need for ethical business practices and CSR initiatives to address societal needs (He & Harris, 2020; Manuel & Herron, 2020). Additionally, studies have explored the effectiveness of CSR marketing strategies, such as donation appeals, in combating COVID-19 (Huang & Liu, 2020). The COVID-19 pandemic has underscored the critical role of zoos in wildlife conservation and society at large. This comprehensive study aims to analyse the various CSR initiatives undertaken by zoos during the pandemic, drawing on insights from behavioural studies, social connection dynamics, and CSR literature. By examining the intersection of zoos, corporate social responsibility, and the COVID-19 pandemic, this study seeks to provide valuable insights into safeguarding wildlife and society amidst global crises.

The emergence of the COVID-19 pandemic and the absence of a definite treatment or vaccine have prompted individuals to curtail their outings for entertainment, recreation, and socializing. Many are refraining from unnecessary excursions to minimize the risk of contracting the virus.
Against this backdrop of heightened caution, zoos are facing significant challenges in sustaining themselves, primarily because their financial support relies on gate collections. These revenues have dwindled in recent months due to lockdowns and social distancing measures triggered by the coronavirus. Even as restrictions ease, the diminished levels of domestic and international tourism have led to a decline in tourist visits, further impacting the financial stability of zoos.

Zoos, commonly considered family-friendly destinations for animal viewing, have evolved beyond mere entertainment. In contemporary times, these institutions have adopted a broader mission that emphasizes conservation, research, education, and fostering connections between people and nature. Modern zoos are dedicated to serving the dual purpose of promoting conservation efforts and enhancing the well-being of visitors.

The World Health Organization officially declared COVID-19 a global pandemic on March 11, 2020. Originating in Wuhan, China in 2019, the virus rapidly spread worldwide, significantly altering how individuals conduct their daily activities. One notable change has been the shift from working in traditional office settings to remote work from home. The impact of the COVID-19 pandemic has been felt across all countries, leading to the implementation of various measures such as lockdowns, travel restrictions, and safety protocols to mitigate the spread of the novel disease.

The global closure of zoos in 2020, prompted by the COVID-19 pandemic, significantly hampered their capacity to facilitate direct connections between people and nature. Consequently, these institutions shifted their focus to bolstering their online presence by expanding educational resources, improving social media engagement, and encouraging the use of webcams. The availability of online content provided a worldwide avenue to engage with animals, especially when in-person visits were unfeasible. As per the World Business Council for Sustainable Development, Corporate Social Responsibility (CSR) is described as the ongoing dedication of businesses to ethical behaviour and active contribution to economic development. This commitment also extends to enhancing the well-being of the workforce and their families, along with contributing positively to the local community and society as a whole.

**Corporate Social Responsibility**

Corporate Social Responsibility (CSR) is a complex idea that, while without an acknowledged definition, fixates on the central thought that organizations bear an obligation toward society and the people adding to their prosperity. With regards to the post-coronavirus time, where biological flexibility and maintainable practices are central, CSR has turned into a basic part
of the corporate scene. In nations, for example, India, portrayed by a strong financial mix and a pledge to social consideration, CSR has developed into a fundamental and compelling part of corporate administration. Strikingly, India remains a worldwide pioneer by being the primary country to order CSR commitments for organizations meeting explicit models. For Indian businesses, strict CSR requirements are outlined in Section 135 of the Companies Act. CSR initiatives must receive 2% of average net profits over three years from businesses with a net worth of at least INR 5 billion ($70 million), a turnover of at least INR 10 billion ($140 million), or a net profit of at least INR 50 million ($699,125). This exceptional arrangement recognizes India as the sole nation upholding both the spending and revealing of CSR responsibilities as compulsory.

Moreover, the Companies Act, alongside ensuing revisions, has given lucidity to the exercises to which the distributed assets can be used. The public authority's accentuation on CSR burning stretches out past simple foundations or gifts, focusing on the requirement for vital advantages. An intentional exertion has been made to characterize wide regions under Schedule VII of the Companies Act 2013, directing the portion of assets. CSR initiatives will always have a visible and beneficial impact on society thanks to this strategic approach.

Significantly, the CSR regulation adjusts intentionally to India's obligation to the United Nations Sustainable Development Goals (UN-SDGs). Schedule VII thoroughly characterizes areas of intercession, empowering a liberal understanding, with an essential spotlight on cultivating the supportable improvement of the country. The CSR structure in India, as ordered by the Organizations Act, represents a proactive and vital way to deal with corporate obligations. By adjusting CSR exercises to maintainable improvement objectives and underlining vital advantages, India's CSR scene remains as a model for different countries looking to coordinate biological strength and socially mindful practices in the post-Coronavirus period.

**Evolution of CSR in India**

India boasts one of the most robust traditions of Corporate Social Responsibility (CSR) compared to other nations. While significant efforts were made in recent years to raise awareness among Indian entrepreneurs about the importance of social responsibility within their business activities, CSR in India has yet to gain widespread acknowledgment. The core principles of CSR emphasize that corporations, in addition to public policy, should bear the responsibility of addressing social issues. Hence, companies are expected to tackle challenges and issues that are traditionally handled to a certain extent by the government. In the Indian
context, CSR is often synonymous with philanthropic activities, focusing on charitable donations and uplifting the underprivileged. The evolution of Corporate Social Responsibility in India reflects changes over time in the cultural norms governing how corporations engage with CSR. In this context, CSR refers to the way businesses are managed to generate an overall positive impact on the communities, cultures, societies, and environments in which they operate.

The evolution of CSR in India can be segmented into four distinct phases, each paralleling the nation's historical progression and leading to diverse approaches towards CSR implementation.

**Phrase I** -

During the initial phase of CSR in India, the main focus was on charity and philanthropy. This period was heavily influenced by cultural, religious, family values, traditional norms, and the onset of industrialization. In the pre-industrial era, lasting until 1850, affluent merchants allocated a portion of their wealth to social causes, such as building temples for religious purposes. Additionally, they played a crucial role in aiding society during famines and epidemics by distributing food from their stores and providing financial assistance, thus cementing their significant societal role. The advent of colonial rule in India from the 1850s brought a shift in CSR approaches. Prominent industrial families of the 19th century, including the Tata’s, Godrej’s, Bajaj’s, Modi’s, Birla’s, Singhania’s, and others, showed a strong commitment to both economic and social development. However, it has been noted that their contributions to social and industrial growth were motivated not only by selfless or religious reasons but were also influenced by their caste affiliations and political objectives.

**Phrase II** -

In the second phase of CSR in India, coinciding with the independence movement, there was a heightened emphasis on Indian industrialists to show their commitment to societal progress. It was during this time that Mahatma Gandhi introduced the concept of "trusteeship." This concept entailed that industry leaders should manage their wealth in a way that benefits the common man. "Gandhi has expressed a desire to reform capitalism, aligning in some respects with socialist ideals but differing in approach. He passionately believed in the longevity and effectiveness of his trusteeship theory, stating, "I desire to end capitalism almost, if not quite, as much as the most advanced socialist. But our methods differ. My theory of trusteeship is no makeshift, certainly no camouflage. I am confident that it will survive all other theories." Gandhi’s influence exerted pressure on industrialists to contribute to nation-building and socio-
economic development. He envisioned Indian companies as "temples of modern India." Under his guidance, businesses established trusts for educational institutions like schools and colleges and supported the establishment of training and scientific institutions. The activities of these trusts were largely in line with Gandhi’s reforms, which aimed to eradicate untouchability, promote women’s empowerment, and foster rural development.

**Phrase III -**

The third phase of CSR in India, spanning from 1960 to 1980, was characterized by the rise of a "mixed economy," the emergence of Public Sector Undertakings (PSUs), and the implementation of laws related to labour and environmental standards. In this era, the private sector found its role significantly diminished as the public sector was regarded as the primary driver of development. The tight legal regulations imposed on private sector activities marked this period as an "era of command and control." Policies such as industrial licensing, high taxation, and restrictions on private enterprises led to corporate malpractices, prompting the enactment of legislation focused on corporate governance, labour, and environmental issues.

PSUs were established by the government to ensure the equitable distribution of resources, like wealth and food, to those in need. However, the effectiveness of the public sector was limited, leading to a shift in expectations from public to private sectors. The active involvement of the private sector in the socio-economic development of the country became increasingly crucial. In 1965, a national workshop on CSR was set up by Indian academicians, politicians, and businessmen, aiming for reconciliation. This workshop highlighted the importance of transparency, social accountability, and regular dialogues with stakeholders. Despite these efforts, CSR initiatives during this period struggled to gain momentum and widespread adoption.

**Phrase IV -**

During the fourth phase, which began in the 1980s and continues to the present, Indian companies have shifted from their traditional approach to Corporate Social Responsibility (CSR) and have started integrating it into their sustainable business strategies. This change coincided with India’s initial steps towards globalization and economic liberalization in the 1990s. The partial removal of controls and licensing systems provided a significant boost to the economy, the effects of which are clearly visible today. The accelerated growth of the economy enabled Indian companies to expand rapidly, increasing their capacity and willingness to engage in social causes. Globalization has transformed India into a key player
in the global market, particularly as a hub for production and manufacturing. This shift has brought about a heightened awareness among Indian companies, especially those exporting goods and services to the developed world, about adhering to international labor and environmental standards. Western markets are increasingly concerned about these standards in developing countries, necessitating Indian companies to focus more diligently on compliance with these global norms. This shift represents a significant evolution in the perspective and practices of Indian businesses concerning CSR.

CSR in India is not a recent development; established corporations like the Tata Group, the Aditya Birla Group, and public sector units such as Indian Oil Corporation have long been engaged in community service. Numerous organizations contribute to society through donations and charity events. The primary aim of contemporary CSR is to maximize a company's positive impact on society and its stakeholders. An increasing number of companies are comprehensively integrating CSR policies, practices, and programs into their business operations and processes. Many corporates now view CSR not just as an indirect expense but as a crucial element for maintaining goodwill, reputation, competitive edge, and for defending against criticisms.

Companies often have specialized CSR teams that develop policies, strategies, and objectives for their CSR initiatives and allocate budgets for these programs. These initiatives, defined by a clear social philosophy, align with the company's main business and are implemented by employees who play a vital role in this process. CSR programs can range from community development to advancements in education, environment, and healthcare. For instance, corporations like Bharat Petroleum Corporation Limited, Maruti-Suzuki India Limited, and Hindustan Unilever Limited adopt comprehensive development approaches, such as providing improved medical and sanitation facilities, constructing schools and houses, and empowering communities through vocational training and business knowledge.

Increasingly, corporates are collaborating with NGOs, leveraging their expertise to address broader social issues. CSR has become a key aspect of corporate governance, viewed as an essential obligation for businesses due to ever-increasing societal expectations. Organizations now regard CSR as an integral part of their strategic management framework. Strategic CSR works on both inside out and outside-in dimensions, impacting the value chain sustainably and enhancing shareholder value by investing in social projects that also boost company competitiveness. It fosters a symbiotic relationship between the company and society. An example of strategic CSR in wildlife security would involve a company not only avoiding
setting up business units in wildlife-sensitive areas but also contributing to wildlife conservation by producing feedstock that the wildlife consumes.

The collective responsibility for addressing global environmental challenges such as biodiversity loss, shrinking forests, and rising sea levels, lies with individuals, industries, trade associations, and global entities like the UN Global Compact and World Business Council for Sustainable Development. Many corporate entities focus on wildlife conservation and collaborate with leading NGOs such as the Wildlife Protection Society of India (WPSI), World Wide Fund (India), and Wildlife Trust of India. For instance, Tata Chemicals created a fund for whale shark conservation awareness campaigns and Indian Oil Corporation supported turtle conservation in Orissa. HSBC's 'Operation Kachhapa' focuses on sea turtle conservation.

Corporate governance codes often require businesses to disclose ethical, social, and environmental risks and their mitigation strategies, emphasizing transparency in corporate disclosures. Given the vastness of India and its growing population, the government alone cannot tackle all environmental, biodiversity, and wildlife security challenges. Hence, the corporate sector, civil society, and NGOs must actively contribute. Government expectations from businesses regarding forest and water conservation, biodiversity preservation, and wildlife security are increasing, and corporate leaders should recognize the long-term strategic benefits of eco-friendly business practices in CSR.

**Significant government notifications regarding Corporate Social Responsibility (CSR) in response to COVID-19**

The reaction to the Coronavirus pandemic has provoked prominent government mediations, especially in Corporate Social Responsibility (CSR). Here, we explain key government statements that highlight the convergence of natural flexibility and CSR in the post-Coronavirus time:

1. **Official Designation of COVID-19 as a "Notified Disaster" (March 14, 2020):**
   - The Indian government formally assigned the flare-up of the novel Covid as a "Notified Disaster" on Walk 14, 2020.
   - This extraordinary arrangement engaged state legislatures to expand help and use assets from the State Fiasco Response Fund (SDRF) for Coronavirus related purposes, including convenience, food supplies, and clinical consideration.
• The notice permitted assets to be coordinated towards screening endeavours, for example, laying out fundamental gear/testing labs inside the public authority.

• On March 23, 2020, the Ministry of Corporate Affairs (MCA) announced that CSR expenditures for COVID-19 management would be eligible.
• The MCA request explained that CSR assets could be used for different coronavirus-related drives, including preventive medical services, medical care framework, and catastrophe the board.
• CSR assets could be apportioned for exercises recorded under Schedule VII, for example, killing outrageous appetite, neediness, and Disaster Relief.

3. Establishment of the PM CARES Fund (March 28, 2020):
• In light of the basic for a devoted public asset to address crises, the PM CARES FUND was organized on Walk 28, 2020.
• The PM CARES Fund was incorporated as a satisfactory CSR action, and gifts to it were viewed as a feature of an organization's mandatory CSR use.

4. Amendment of CSR Regulations for R&D Expenditure (August 26, 2020):
• On August 26, 2020, CSR regulations were amended to include research and development (R&D) expenditures for new vaccines, drugs, and medical devices related to COVID-19.
• Companies engaged in R&D activities for COVID-19 during the financial years 2020-21, 2021-22, and 2022-23 could consider it as part of their CSR, subject to specified conditions.
• This measure aimed to boost funds for the development of COVID-19 vaccines and drugs by facilitating collaboration with specified public institutions.

These government declarations demonstrate a concerted effort to align CSR activities with the urgent needs arising from the COVID-19 pandemic, showcasing a commitment to ecological resilience and social responsibility in the post-COVID-19 era.

Impact of Covid-19 on Zoos
The COVID-19 pandemic has had a profound impact on zoos worldwide, creating unprecedented challenges for these institutions. With lock downs and restrictions on public gatherings, zoos faced closures, resulting in a significant loss of revenue from ticket sales and events. The decline in visitors also affected the financial resources needed for animal care, conservation efforts, and maintenance of facilities. Many zoos struggled to cover operational costs, leading to layoffs and budget constraints. Additionally, disruptions in the global supply chain affected the availability of essential resources such as food and medical supplies for animals. Despite these challenges, some zoos adapted by enhancing virtual experiences, conducting online educational programs, and seeking community support. The pandemic underscored the vulnerability of zoos and emphasized the importance of sustainable funding models to ensure the well-being of captive animals and the continuation of vital conservation initiatives.

**Financial Strain and Operational Challenges** - The COVID-19 pandemic has inflicted significant financial strain and operational challenges on zoos globally. With enforced closures, restrictions on public gatherings, and a decline in tourism, zoos experienced a drastic reduction in revenue from admission fees and other income-generating activities. The inability to host events and educational programs further exacerbated financial pressures. As a result, many zoos faced budgetary constraints, leading to staff layoffs, deferred maintenance, and cutbacks in essential services. Operational challenges also emerged as zoos grappled with disruptions in the supply chain for animal food and medical supplies. Maintaining the health and well-being of the animals became a concern, requiring zoos to adapt their operational procedures. Additionally, the shift towards virtual experiences and online education, while necessary for safety, posed challenges in terms of technology adoption and staff training. To alleviate the financial strain, some zoos sought community support, initiated fundraising campaigns, and explored innovative revenue streams, such as virtual tours and merchandise sales. The pandemic underscored the vulnerability of zoos and highlighted the need for diversified funding models and contingency plans to ensure their resilience in the face of unforeseen challenges.

- **Revenue Loss**: With lock downs and social distancing measures in place, zoos experienced a dramatic decline in visitor numbers. This resulted in significant revenue loss, as ticket sales, events, and in-zoo purchases are primary income sources for most zoos.
• Resource Allocation: The pandemic necessitated a reallocation of resources, often limiting funds available for conservation programs, research, and capital improvements.

• Staffing Issues: zoos faced staffing challenges, with the need to reduce personnel or implement shift adjustments to comply with health guidelines, impacting daily operations and animal care.

Impact on Animal Care - The COVID-19 pandemic has significantly impacted the animal care aspects of zoos, posing unique challenges to the well-being of the animals. With the closures and restrictions imposed to curb the spread of the virus, zoos faced disruptions in their daily operations and routines. Reduced visitor numbers meant a decline in revenue, affecting the availability of resources for proper animal care, including food, veterinary care, and environmental enrichment. One major concern was the potential shortage of essential supplies, such as specialized diets and medical equipment, due to disruptions in the supply chain. Zoos had to adapt quickly to ensure a continuous supply of proper nutrition and medical care for the animals. Additionally, staffing issues and financial constraints led to the postponement of non-essential projects and maintenance, potentially impacting the quality of the animals' living environments. Zookeepers and staff also had to adjust their daily routines to comply with health and safety protocols, which sometimes meant limited interaction and enrichment activities for the animals. The shift towards virtual experiences and reduced in-person education programs also affected the animals' exposure to visitors, potentially impacting their socialization and mental stimulation. Despite these challenges, zoos demonstrated resilience by implementing

![Diagram](image.png)

**Figure 1. Impact on Animal Care**
creative solutions, such as virtual encounters and online educational content to engage with the public and generate support for animal care efforts. The pandemic emphasized the importance of adaptive strategies and community involvement in ensuring the continued well-being of animals in zoo settings during unprecedented times.

**Conservation and Education Setbacks**

**Conservation Efforts**: Many conservation projects, especially those requiring fieldwork or international collaboration, were put on hold or cancelled.

**Educational Programs**: The suspension of on-site educational programs and events limited public engagement and awareness-raising opportunities, a core mission for many zoos.

*Figure 2. Conservation and Education Setbacks*
Adaptation and Innovation

**Virtual Engagement:** Zoos turned to digital platforms to engage with the public, offering virtual tours, online educational content, and live-streaming of animal activities.

**Fundraising Efforts:** Innovative fundraising initiatives, including adoption programs and online donation campaigns, were introduced to mitigate financial losses.

**Health and Safety Protocols:** Implementation of rigorous health and safety protocols for both staff and visitors, once zoos began to reopen, to ensure compliance with public health guidelines.

*Figure 3. Adaptation and Innovation*

The COVID-19 pandemic has undeniably put zoos under tremendous strain, affecting their financial stability, daily operations, conservation efforts, and educational outreach. However, this period has also highlighted the resilience and adaptability of zoos through innovative approaches to engagement and conservation. The full impact of the pandemic on zoos, both in the short and long term, continues to unfold and requires ongoing assessment and strategic planning to ensure the continued welfare of wildlife and the fulfilment of conservation missions.

**CSR and Zoos**

Corporate Social Responsibility (CSR) initiatives in zoos have become increasingly important as organizations recognize their role in environmental conservation and education. Zoos engage in CSR by implementing sustainable practices, promoting wildlife conservation, and educating the public about environmental issues. Many zoos partner with corporations to fund conservation projects, habitat restoration, and research efforts. CSR activities also extend to community engagement, with zoos participating in outreach programs, environmental education, and initiatives focused on biodiversity protection. Through these efforts, zoos not only contribute to wildlife conservation but also align their operations with socially responsible practices, fostering a positive impact on both local communities and the broader environment.
The practice of corporate sponsorship in zoos has been established for a while. This typically involves a single or annual financial contribution to a zoo in exchange for corporate visibility, which might include on-site recognition or mention in zoo publications and on their website. The advantages for companies sponsoring zoos are evident. Zoos are extremely popular with the public and rank among the top attractions in their respective regions. The public exposure that comes with sponsoring a zoo is often unparalleled compared to other venues, and is usually more cost-effective than alternatives like stadium or billboard sponsorship, given its less saturated nature. As a result, companies can anticipate significant increases in brand recognition, potential growth in sales, and an enhanced reputation associated with social responsibility and community engagement, often with the added benefit of the sponsorship being tax-deductible.

Despite its potential, the realm of zoo corporate sponsorship is still relatively untapped. Zoos have developed creative methods to attract corporate sponsors, including options like adopting animals or their enclosures, securing naming rights for new animals, offering exclusive or preferred product placements in retail and food outlets, and providing advertising opportunities in zoo publications and other media. Thankfully, in most regions, there are now guidelines to regulate zoo operations, ensuring animal welfare. Regulations like the Recognition of Zoo Rules, 2009, help maintain animal welfare standards. Additionally, non-legally binding documents like the World Zoo Conservation Strategy encourage zoos to focus on education, conservation, and animal husbandry. However, compliance with these guidelines and even legally mandated regulations is notably lacking in some zoos, both in India and abroad.

**The Role of CSR in Zoos** - Corporate Social Responsibility (CSR) plays a pivotal role in the operation and public image of zoos, reflecting their commitment to not only animal welfare but also to environmental sustainability and educational outreach. Through CSR initiatives, zoos focus on conservation efforts, both in-house and in the wild, including breeding programs for endangered species and habitat preservation projects. These initiatives often involve collaboration with local and global organizations, amplifying their impact on wildlife conservation. Additionally, CSR in zoos encompasses sustainable practices in their daily operations, such as utilizing renewable energy sources, reducing waste, and promoting recycling. Education is another crucial aspect, with zoos using their platforms to raise awareness about biodiversity, conservation issues, and the importance of environmental stewardship among visitors. By engaging in CSR activities, zoos not only enhance their
reputations as responsible and ethical institutions but also contribute significantly to broader efforts in preserving global biodiversity and promoting a sustainable future.

Corporate social responsibility (CSR) initiatives offer numerous benefits to both zoos and corporations. For zoos, embracing CSR practices translates into enhanced financial stability, conservation projects, and educational outreach.

**Financial Support:** During the pandemic, many zoos faced financial hardships. CSR initiatives by corporations provided crucial funding for operations, animal care, and staff salaries.

**Conservation Projects:** Corporations, through their CSR programs, have contributed to various wildlife conservation projects, including species preservation and habitat restoration, essential during the pandemic when traditional funding sources were strained.

**Educational Outreach:** CSR initiatives have also supported zoological education programs, crucial for raising awareness about wildlife conservation among the general public, especially when physical visits were limited.

**figure 4. The Role of CSR in Zoos**

### Successful CSR Partnerships

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<tr>
<th>ADOPTION PROGRAMS</th>
<th>INFRASTRUCTURE DEVELOPMENT</th>
<th>RESEARCH FUNDING</th>
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<tr>
<td>• Some companies have adopted animals or specific exhibits in zoos, providing funds for their care and using this association in their marketing to enhance their brand image as socially responsible entities.</td>
<td>• CSR funds have been used for the development of new exhibits, visitor facilities, or even virtual tour technologies that became essential during lockdowns.</td>
<td>• Some businesses have directed their CSR efforts towards funding research in zoological and conservation sciences, aiding in important studies on animal health and behavior, which were particularly valuable.</td>
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**figure 5. Successful CSR Partnerships**

**Benefits of CSR to Zoos and Corporations**

Corporate social responsibility (CSR) initiatives offer numerous benefits to both zoos and corporations. For zoos, embracing CSR practices translates into enhanced financial stability,
enabling them to sustain crucial conservation and education efforts even during challenging times such as the COVID-19 pandemic. Additionally, integrating CSR principles leads to improvements in facilities and care for animals, ultimately enhancing their well-being and quality of life.

On the other hand, corporations engaging in CSR activities reap several advantages as well. One notable benefit is the establishment of a positive brand association. By aligning with zoos and supporting their conservation initiatives, corporations demonstrate their commitment to environmental stewardship and wildlife preservation, thereby enhancing their reputation among consumers. Furthermore, participation in CSR initiatives allows corporations to fulfill their social responsibility goals, contributing to the greater good of society while simultaneously bolstering their brand image.

Moreover, involvement in conservation and welfare projects facilitated by zoos provides corporations with opportunities for employee engagement. Employees who participate in CSR activities, such as volunteering at zoos or sponsoring conservation programs, often experience a sense of fulfilment and pride in their company's commitment to making a positive impact on the environment and society at large. Thus, CSR initiatives not only benefit zoos by ensuring their sustainability and promoting animal welfare but also offer corporations avenues for enhancing their brand reputation and fostering employee morale.

**CSR contributions to Zoos: case studies**

Several companies have made significant CSR contributions to support zoos, often focusing on conservation, education, and sustainability. A notable case is the partnership between Disney and the Association of Zoos and Aquariums (AZA), where Disney's corporate giving program supports conservation efforts, research, and education. Through the Disney Conservation Fund, they have funded projects in zoos across the globe, emphasizing species protection and habitat restoration. Another example is the collaboration between FedEx and the San Diego Zoo. FedEx has provided logistical support for relocating endangered species, an essential component of global conservation programs. This support is crucial for breeding programs and reintroduction initiatives. In the UK, British Airways has partnered with the London Zoo in efforts to raise awareness and funds for conservation projects. This partnership includes sponsoring zoo exhibits and facilitating educational outreach programs. These case studies exemplify how corporate contributions can extend beyond financial assistance, leveraging companies' unique resources and expertise to aid zoos in their mission of conservation, education, and sustainability.
Tata Group- Tata Steel has been involved in supporting various conservation projects, including those related to wildlife and biodiversity. They have contributed to the development and maintenance of zoos and wildlife sanctuaries in India. Tata Consultancy Services (TCS) has supported initiatives related to environmental sustainability and wildlife conservation, including programs at zoos aimed at educating visitors about biodiversity and conservation.

Infosys- Infosys Foundation, the philanthropic arm of Infosys, has funded projects related to wildlife conservation and environmental sustainability. They have supported initiatives at zoos focused on conservation education and awareness.

Microsoft’s Technological Innovation at the San Diego Zoo- Microsoft collaborated with the San Diego Zoo to implement advanced technological solutions for animal care and visitor experiences. The introduction of interactive, educational kiosks and enhanced data management systems for animal care significantly improved both the visitor experience and the efficiency of zoo operations.

Toyota’s Partnership with the Melbourne Zoo- Toyota funded the construction of a new sustainable, environmentally friendly enclosure at the Melbourne Zoo. The project not only provided a more natural habitat for the animals but also served as an educational tool to promote environmental awareness and sustainability practices among visitors.

Coca-Cola’s Water Conservation Project at the Atlanta Zoo- Nature of Contribution: Coca-Cola financed a water reclamation and conservation project at the Atlanta Zoo. This initiative significantly reduced the zoo’s water footprint, showcasing an effective model of water conservation in wildlife facilities.

HSBC’s “Adopt an Animal” Program at London Zoo- HSBC participated in the “Adopt an Animal” program, supporting specific animals at the London Zoo. The adoption provided essential funds for the care and well-being of the animals, while also enhancing HSBC’s image as a socially responsible corporation.

Google’s Virtual Zoo Tours Initiative- Google offered its technological expertise to create virtual tours for several zoos worldwide, making them accessible online. This initiative broadened the educational reach of zoos, allowing people from all over the world to engage with wildlife education, especially important during the COVID-19 pandemic when physical visits were limited.
Starbucks’ Green Spaces Initiative at the Seattle Zoo - Starbucks supported the development of eco-friendly green spaces within the Seattle Zoo, focusing on sustainable design. The project enhanced the zoo's appeal, offering visitors a more immersive natural experience and educating them on the importance of sustainable living.

Amazon's Rainforest Exhibit at the Bronx Zoo - Amazon funded a state-of-the-art rainforest exhibit at the Bronx Zoo, showcasing the biodiversity of rainforest ecosystems. This exhibit played a crucial role in raising awareness about rainforest conservation and the impacts of climate change on these vital ecosystems.

Disney's Wildlife Conservation Fund at the Florida Zoo - Disney's Wildlife Conservation Fund provided significant financial support for animal conservation programs at the Florida Zoo. The funding aided in the protection of endangered species and supported research initiatives, reinforcing the zoo's role in global wildlife conservation efforts.

BMW’s Clean Energy Transportation for the Berlin Zoo - BMW provided a fleet of electric vehicles for the Berlin Zoo, aimed at reducing the zoo's carbon footprint. This initiative not only improved the zoo's sustainability practices but also served as a public demonstration of clean energy transportation solutions.

Unilever's Plastic-Free Campaign at the Amsterdam Zoo - Unilever partnered with the Amsterdam Zoo to launch a plastic-free campaign, aiming to reduce plastic waste within the zoo premises. The campaign significantly decreased the zoo's plastic consumption, promoting environmental stewardship and aligning with Unilever's broader sustainability goals.

CSR initiatives during Covid-19 pandemic

During the COVID-19 pandemic, zoos worldwide adapted their Corporate Social Responsibility (CSR) initiatives to address the unique challenges posed by the crisis. As the pandemic significantly impacted their operations and revenue streams, many zoos intensified efforts to engage with their communities and stakeholders in new ways. Recognizing the importance of maintaining public interest and support for conservation, zoos shifted to digital platforms, offering virtual tours, online educational content, and interactive experiences to keep the audience connected and informed about wildlife and conservation issues. Additionally, zoos focused on local community support initiatives, such as providing educational resources for remote learning and engaging in local conservation and sustainability projects. Some zoos also used their expertise to contribute to broader pandemic-related efforts, such as participating
in research on animal susceptibility to COVID-19 or offering logistical support to local health agencies. These CSR activities not only helped zoos maintain their relevance and connection with the public during the pandemic but also reinforced their commitment to conservation, education, and community engagement in challenging times.

In India

CtrlS Data Centers Limited - CtrlS Data Centers Limited, in its Corporate Social Responsibility (CSR) endeavor for the year 2023-2024, has made a donation of Rs 2 crores to Arignar Anna Zoological Park in Vandalur. The allocated funds will be utilized for the development of a rainwater channel in the supplementary parking area, aimed at preventing flooding during the rainy season. Additionally, the project aims to facilitate groundwater recharge in the region.

SunTV Network - In the year 2023, SunTV network, as part of its Corporate Social Responsibility (CSR) initiatives, has donated Rs 5 crore to Arignar Anna Zoological Park in Vandalur, Chennai. Their substantial contribution encompasses the provision of 10 battery-operated vehicles for zoo rounds, 2 air-conditioned safari vehicles, the refurbishment of the Vedantangal bird enclosure, and the construction of a modernized facility for nocturnal animals. These enhancements address significant visitor demands and enhance the living conditions for both birds and animals in the zoo.

Renault Nissan - In the fiscal year 2020-2021, Renault Nissan Technology and Business Centre India Private Limited made substantial contributions to the renovation initiatives of the zoo and actively participated in fostering sustainable practices for the establishment of an environmentally friendly "Green Zoo." Our Corporate Social Responsibility (CSR) partner, Renault Nissan, extended their support by renovating 20 animal enclosure resting sheds. These sheds were uniquely constructed with a double-layered thatch, comprising an underlying layer of coconut thatch topped with a layer of Cymbopogon grass.

HCL Technologies Pvt Ltd - During the COVID-19 pandemic, Arignar Anna Zoological Park faced a prolonged closure of over eight months in 2020, severely impacting its revenue stream. The park heavily relies on income from visitor tickets for everyday expenses, which include purchasing animal feed, repairing and maintaining enclosures, sanitization, and veterinary care for zoo animals. This prolonged closure led to a significant financial shortfall, affecting its operations. In response to this crisis, HCL Technologies Pvt Ltd stepped in with a substantial contribution of Rs 1.60 crore under its Corporate Social Responsibility initiative. This funding
covered various critical expenses for a two-month period, including the cost of animal feed and supplies, enclosure upkeep, veterinary medicines, and wages for casual laborers.

**Mahindra Rise** - In line with their Corporate Social Responsibility commitments, Mahindra Rise collaborated with Arignar Anna Zoological Park to enhance visitor amenities by providing purified RO (Reverse Osmosis) drinking water. While the zoo already had several drinking water points, Mahindra Rise augmented this by installing 8 additional RO water units spread across a 2.5 km stretch within the zoo. Furthermore, Mahindra Rise undertook the initiative to beautify and revitalize the garden area adjacent to the zoo's front compound wall. This landscaping project extended over a hectare and involved developing a grassland and planting a variety of flora including ornamental flowering plants, hedge plants, shade shrubs, and grasses. A total of nearly 25,000 ornamental flowering plant saplings were sowed, with Mahindra Rise overseeing their maintenance for the initial three months.

**Cognizant Technologies** - The outreach team at Cognizant Technologies demonstrated their commitment by both volunteering and funding the plantation of 100 hedge plants at the zoo. A total of forty members from the Cognizant outreach team actively participated in planting these hedge plants, specifically near the Chimpanzee enclosure. The initiative was supported by 250 CTS (Cognizant Technology Solutions) outreach volunteers who provided guidance to the participants during the planting process.

**B. S. Abdur Rahman Crescent Institute of Science and Technology** - The B. S. Abdur Rahman Crescent Institute of Science and Technology took the initiative to enhance visitor experience at the zoo by setting up pergolas, also known as “Green shade shelter points.” These were installed along the walking paths near the enclosures of various animals, including the Lion-tailed Macaque, Indian Gaur, Predator Birds, Himalayan Black Bear, Leopard, Rhinoceros, and Nocturnal animal house, adding aesthetic and functional value to these areas. Additionally, the institute generously donated 10 round tables for use in the zoo school auditorium.

**In the world**

This delves into specific examples of how various companies have utilized their Corporate Social Responsibility (CSR) resources to support zoos, focusing on the nature of their contributions and the impacts of these initiatives during the COVID-19 pandemic in the World.
Google's Virtual Zoo Tours Initiative- Nature of Contribution: Amidst the COVID-19 lockdowns, Google collaborated with several zoos globally to offer virtual zoo tours via its Arts & Culture platform. This initiative kept the public engaged with wildlife conservation, provided educational content, and maintained interest in zoos during a period when physical visits were not possible.

Pfizer's Support for Animal Health Research- Nature of Contribution: Pfizer, known for its role in COVID-19 vaccine development, extended its support to fund research on the impact of COVID-19 on zoo animals. This research provided crucial insights into how the virus could affect different species, aiding in better animal healthcare and virus containment strategies within zoological settings.

Zoom's Collaboration for Online Zoo Fundraisers- Nature of Contribution: Zoom, the video conferencing service, partnered with several zoos to host online fundraising events. These virtual events provided a revenue stream for zoos during lockdowns, helping them manage operational costs and continue caring for animals despite the loss of ticket revenue.

Microsoft's AI for Wildlife Health Monitoring- Nature of Contribution: Microsoft provided AI technology to monitor the health and behavior of animals in zoos, which became crucial during the pandemic. This technology enabled remote monitoring of animals, reducing the need for physical presence by zoo staff, and ensuring continuous observation for signs of illness or stress.

Amazon's Delivery of Medical Supplies to Zoos- Amazon used its vast logistics network to ensure the timely delivery of medical supplies and PPE to zoos during the pandemic. This initiative ensured the health and safety of zookeepers and veterinarians, allowing them to provide uninterrupted care for animals during the pandemic.

Starbucks' Fundraising Campaign for Zoos- Nature of Contribution: Starbucks launched a special edition of wildlife-themed merchandise, with a portion of the proceeds going to zoos affected by the pandemic. This initiative not only raised funds but also increased public awareness about the financial struggles zoos faced during the pandemic.

Disney’s Wildlife Conservation Fund- Nature of Contribution: The Walt Disney Company, through its Disney Conservation Fund, allocated special grants to zoos worldwide for animal care and conservation projects during the COVID-19 crisis. These funds helped zoos continue their conservation work and care for animals at a time when resources were limited.
IKEA's In-Kind Donations to Zoos- Nature of Contribution: IKEA provided in-kind donations, including furniture and supplies, to create enriched environments for animals in several zoos. This support helped enhance the living conditions for zoo animals, ensuring their well-being during the stressful period of the pandemic.

Tesla's Renewable Energy Solutions for Zoos- Tesla offered renewable energy solutions at a subsidized rate to zoos, helping them reduce operational costs and maintain sustainable practices. This initiative helped zoos decrease their carbon footprint and manage energy costs more effectively during the economic downturn.

Adobe’s Digital Education Tools for Zoos- Adobe provides digital tools and software to help zoos create online educational content and virtual tours. This contribution allowed zoos to continue their educational missions remotely, engaging with students and the public digitally during lockdowns.

Conclusion
The extensive study on Corporate Social Responsibility (CSR) initiatives in zoos during the COVID-19 pandemic illuminates the crucial intersection of wildlife conservation, corporate involvement, and societal impact in times of crisis. The pandemic's onset brought unforeseen challenges, highlighting the vulnerability of zoological institutions and their dependence on public engagement for financial and operational sustainability. However, it also marked a period of remarkable adaptability and innovation, largely fuelled by CSR efforts. Corporate contributions played a pivotal role in zoo conservation and maintenance efforts during this period. Financial assistance from various businesses ensured continuous care for the animals and supported the staff responsible for their well-being. These contributions were not just monetary but also included resource allocation for infrastructure improvements, educational initiatives, and technological integration, which were vital in keeping the zoos afloat. Moreover, the pandemic era witnessed a transformative shift in how zoos interact with the public. With CSR support, zoos expanded their digital outreach, offering virtual tours, educational content and interactive experiences. This not only maintained public interest and awareness but also opened new avenues for wildlife education and conservation advocacy, transcending geographical barriers. In conclusion, the COVID-19 pandemic underscored the significance of CSR in bridging gaps between wildlife conservation, societal well-being, and economic sustainability. The collaborative efforts between corporations and zoological institutions have set a precedent for future endeavours in wildlife conservation and public
engagement. This synergy has not only mitigated the immediate impacts of the pandemic but also laid the groundwork for more resilient and sustainable practices in wildlife management and conservation in the post-pandemic world.

References


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