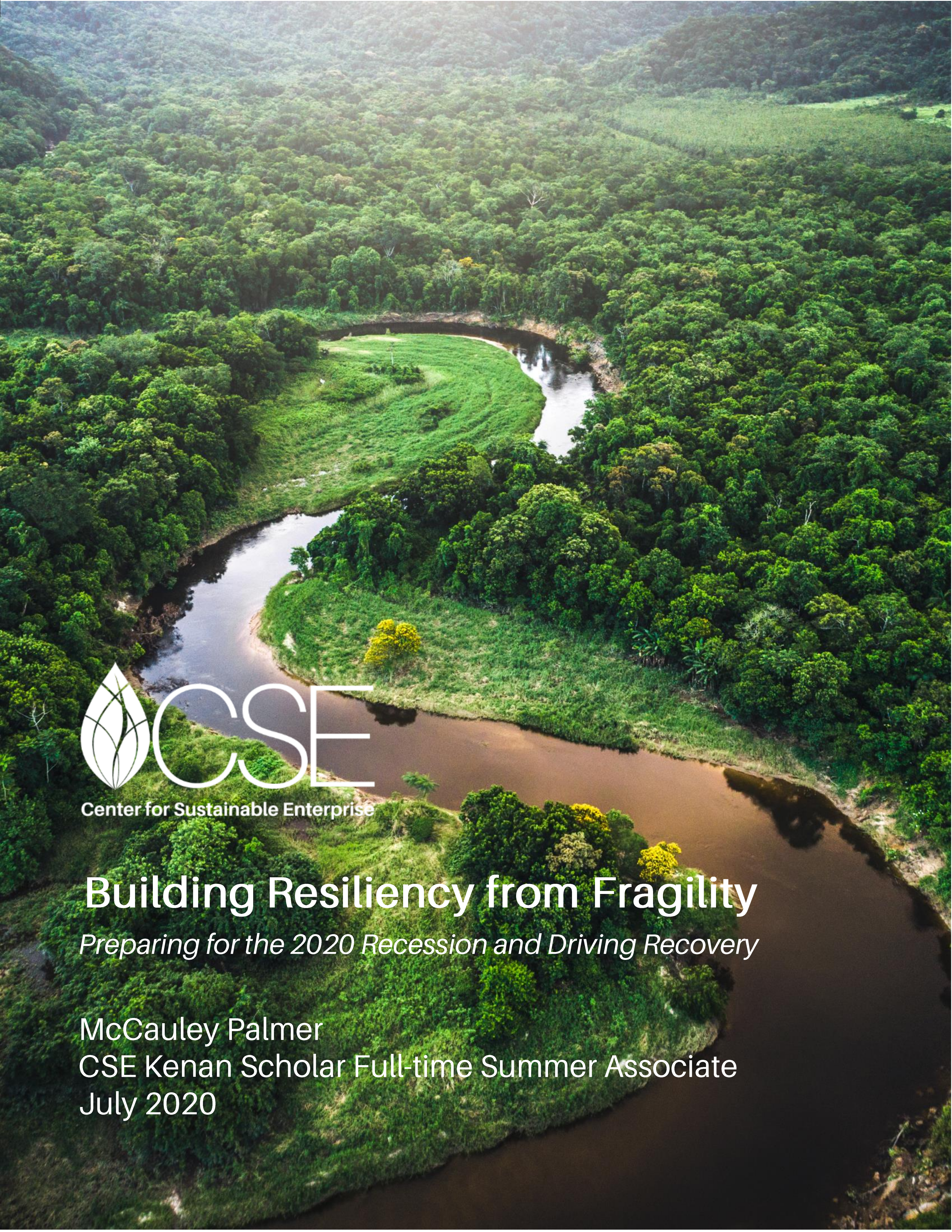

CSE

Center for Sustainable Enterprise

Building Resiliency from Fragility

Preparing for the 2020 Recession and Driving Recovery

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Contents

Abstract

This report provides an analysis of preparing for a recession and driving recovery in the context of the 2020 recession in response to the global COVID-19 pandemic. The research draws attention to the potential for sustainable development as a mechanism to both drive recession recovery for the private sector and to build resiliency for future crises.

The report outlines recessionary trends at a macro-level to identify opportunities at the micro-level. Collective action from individual stakeholders is necessary to truly recover and build resiliency from this recession and future crises.

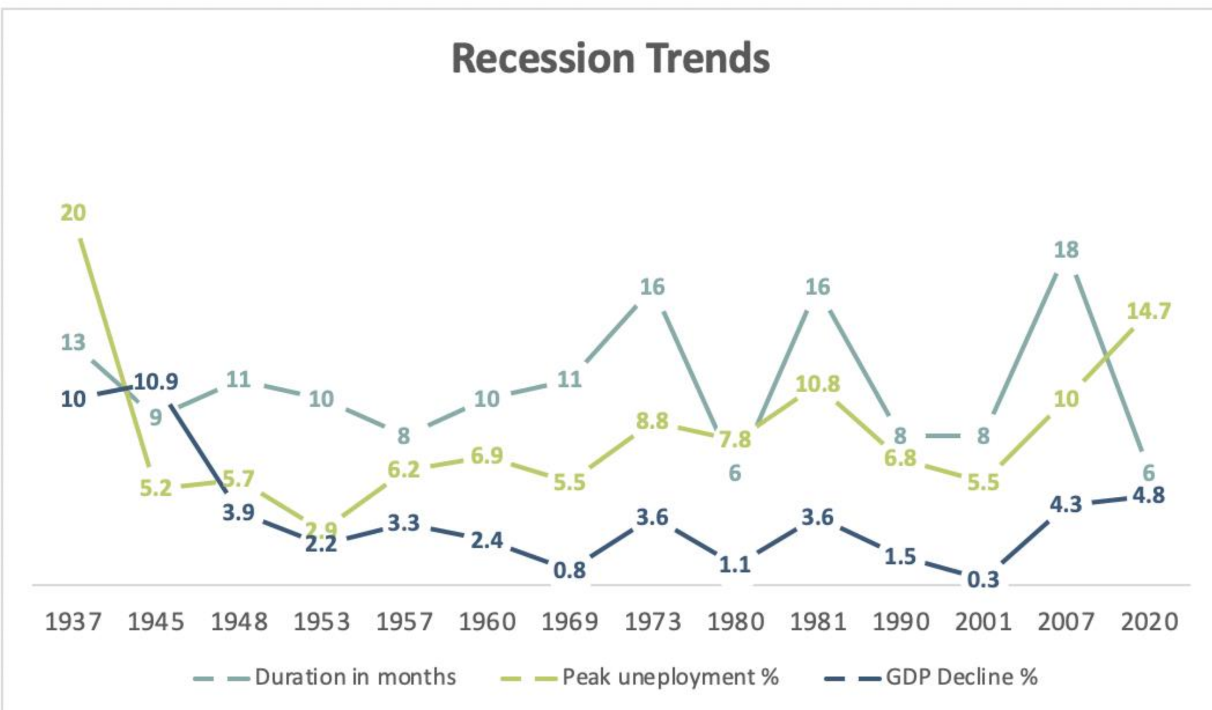
The strategies described are always in the best interest of individual businesses and society but can be particularly beneficial in the face of recession. Long-term sustainable thinking provides leverage for businesses to either capitalize on or build upon during times of economic stagnation. These strategies are advantageous in preparing for addressing a recession, or in driving recovery. Creating sustainable systems within a business's operations that preserve employment and are resource-efficient is the greatest safety net for any crisis.

The Case of the 2020 Recession

Identifying criteria for classifying a period of economic activity as a recession is a heavily debated topic; it is less debatable that the global economy experienced an abrupt downturn in the first half of 2020. Generally, a recession is defined as GDP declination for two or more consecutive quarters.

Typical signs of an approaching recession include diminishing consumer confidence, stock market declines, rising unemployment, and a drop in the Leading Economic Index. As can be seen in Chart 1, only 6 months into this economic downturn, the United States has already encountered the highest peak unemployment rate at 14.7%, the largest GDP decline at 4.8%, in the shortest period of time of any recession since 1938 (Barufaldi & Chappelow, 2020).

Chart 1: The duration, peak unemployment rate, and GDP decline of every major recession since 1937 (Barufaldi & Chappelow, 2020)



Before COVID-19 the United States was experiencing steady economic growth at 2%, an unemployment rate of 3.6%, its lowest point in the last 50 years, all while the stock market reached record highs (Schulze, 2020). Historically, the leading causes of recessions are sudden economic shocks, excessive debt, asset bubbles, too much inflation, too much deflation, or technological change. This is applicable in today's context; however, the booming economy was not the actual trigger of this recession.

The novelty of the 2020 recession is that it is the first in U.S. history not resulting from to an unhealthy economy, but rather due to a health crisis. While recessions are not abnormal in developed economies, the pandemic triggered an unprecedented supply crisis that the world was unprepared for. Economists have stated that this crisis resembles more of a natural disaster, only this disaster is not restricted to a region. COVID-19 has disrupted the entire world.

Most recessions in U.S. history experience a common contagion: the sudden widespread lack of consumer confidence as a demand crisis. This 2020 recession poses the additional barrier of a supply-side crisis. Not only are people forced to stop working for safety and financial contingency, but they are limited in consumption for the same reasons. This is now a supply and demand crisis.

There will be a cloud of uncertainty throughout the world until the virus itself is under control. The U.S. government has provided extensive economic stimulus, but people are not yet relieved of the fear of the virus recurring. Unlike past recessions, 2020 has the variable factor of containment. The economy is now depending on a biological solution before beginning real economic recovery. In the past, the public and private sectors could react much more quickly to economic downturns because there wasn't a direct life-threat, making this 2020 recession even more fragile.

The 2020 recession is more complex in the way it disproportionately affects different industries, regions, and socioeconomic classes of the economy. Typically, recessions have had a more centralized economic response. In 2008, for example, federal financial support was provided first to large banks to "stop the bleeding at the source," which at least bought time to theoretically have a trickle-down effect on consumers. While this strategy was highly controversial, the point is that recovery was approached with acute intervention. In the case of 2020, resource distribution must be highly orchestrated to rebuild households, businesses, and industries individually.

For example, the first large scale government stimulus package was the Coronavirus Aid, Relief, and Economic Security (CARES) Act in 2020. The following quarter has shown that providing generalized liquidity to stimulate demand doesn't necessarily boost low-income employment across the board. Analyzing consumer behavior throughout the second quarter shows that lower-income areas realized a spike in consumer spending upon receiving financial aid, compared to more affluent areas where spending continued to stagnate. Employment data suggests that small businesses, minority proprietors, face-to-face industries, and low-income households have been harder hit in higher-income regions. Previous studies show that areas with higher household incomes have a lower marginal propensity to consume. This nuance is amplified in a health crisis and cannot be neglected in approaching recovery (Brown & Ozoguz, 2020).

The sanguine difference in 2020 is the state of our global infrastructure and the support that global cooperation can provide in economic and physiological recovery. While there was a debatable level of under-preparedness and passiveness for a global pandemic, the interconnectedness of the world undoubtedly decreased the potential destruction of COVID-19. This innovative platform also poses an unprecedented opportunity to build back better.

Ultimately, society faces a biological threat and an economic threat. Since controlling the life-threatening virus is the top priority, it is difficult to accurately predict the duration and depth of this recession. The 2020 recession has an unprecedented cause and will have a very different recovery. There are the expected repercussions of job loss, stagnant consumer activity, lower productivity, and a scarcity mentality....not to mention a pandemic.

Social Recessionary Trends

The true damage of a recession or depression is most evident in the condition of society. Generally, the poor get poorer, health declines, and animosity is contagious. These trends highlight the need for sustainable development, particularly, stronger infrastructure that can eradicate Earth's most pressing social concerns: poverty, hunger, and access to education.

Many businesses are forced to make difficult decisions to cut costs during a recession. Often, it seems necessary to resort to furloughs, lowering wages, or worsening working conditions. These decisions made by employers are typically far more costly in the long term and worsen societal conditions. Inequities are exacerbated, mental, and physical health declines, productivity is lost, and anxiety is everywhere. Now, more than ever, sustainable development, particularly in preserving employment, is a financially advantageous strategy.

United States unemployment is already above 14%, the highest since the 1937 recession as can be seen in Chart 2. The velocity of employment loss has further amplified societal hardships. The U.S. unemployment rate rose over 10% in just one month shown in Chart 3. In April 2020 alone, 20.6 million people lost employment, most filing for unemployment, and competing for new jobs at the same time. This influx of requests for government assistance slows the distribution of financial resources. On top of new federal programs with situational eligibility criteria, is another layer of state legislation further complicating the different rights and processes a worker must follow for job insurance and protection. In North Carolina, for example, claims must include extensive details from previous employers, retirement plans, banking information, and more. This process prolongs financial insecurity while determining eligibility.

Unemployment resources are helpful during crises, but their lack of salience and accessibility distress the unemployed. Even with government financial relief, unemployed workers are anxious and desperate, knowing that this relief is only temporary. They will eventually have to re-enter the labor market with millions of others just as qualified and eager.

Chart 2: Peak unemployment rate of each major recession since 1937, and 2020 to date (Barufaldi & Chappelow, 2020)

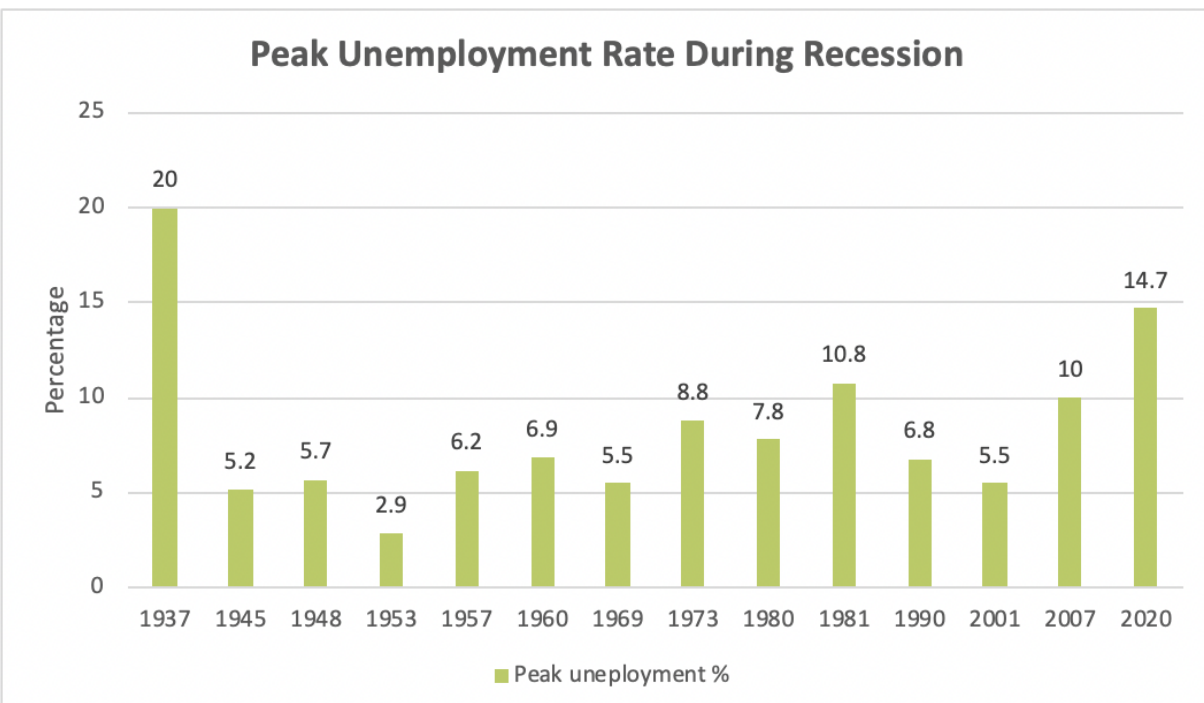
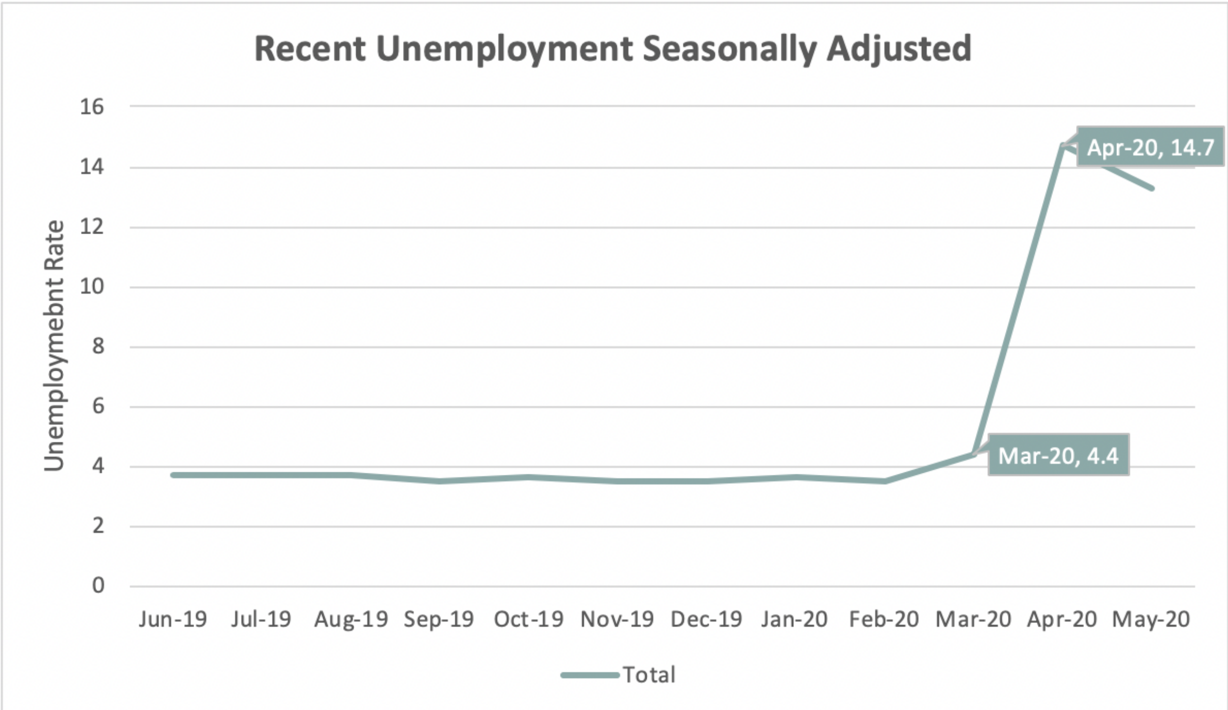


Chart 3: Monthly unemployment rates for men and women above 20 years old (BLS, 2020)



This recession is projected to be one of the deepest in history. With widespread economic strain comes widespread social destruction. Past recessions and depressions have shown the following societal patterns:

- The exploitation of cheap labor, child labor, and general unfair labor practices
- Disproportionate destruction to the impoverished
- Unexpected mass layoffs and furloughs
- Decline in mobilization
- International and communal tensions
- Lack of food, shelter, and job security
- Declines in mental and physiological help; increase in depression and anxiety
- Widening socioeconomic gap
- Increase in domestic crime

On a macro level, there are many sustainable strategies that businesses, individuals, governments, and society at large can adopt not only to recover from this recession but also to thrive from this crisis. Recessions expose many inadequacies, and 2020 has emphasized the dire need for sustainability in our social systems.

The United Nations has announced a "socioeconomic response framework" that includes five streams of work for a recession and pandemic recovery that continues progress on the Sustainable Development Goal of Decent Work and Economic Growth and others ("COVID-19 Response", 2020). While this requires immense political commitment and international support, the UN believes the framework serves as a useful roadmap for socioeconomic recovery.

1. Ensuring that essential health services are still available and protecting health systems
2. Helping people cope with adversity through social protection and basic services
3. Protecting jobs, supporting small and medium-sized enterprises, and informal sector workers through economic response and recovery programs
4. Guiding the necessary surge in fiscal and financial stimulus to make macroeconomic policies work for the most vulnerable and strengthening multilateral and regional responses
5. Promoting social cohesion and investing in community-led resilience and response systems

There are also general actions for sustainable social recovery and resiliency:

- Communicate hope and confidence in the recovery
- Reevaluate priorities to take advantage of this opportunity
- Share skills with others
- Distribute resources that would be wasted
- Build adaptive capacity for future crises
- Build trust in systems for resiliency
- Capitalize on diverse perspectives to innovate
- Establish common meaning so individuals feel part of a greater mission

Intentionally fostering a deep sense of value and purpose is the foundation of sustainable recovery. If employers truly value their employees, employees truly value their work, and there is a strong sense of purpose in this work, sustainable practices will be easier and more advantageous to implement. This creates a shift in mindset from sustainable development and human capital as "cost-driving" to "profit-driving."

Similar effects can be found outside of business if individuals feel a deeper sense of value and purpose in themselves, others, and society at large. This leads people to take their own sustainable initiatives in health, education, and efficacy in general. Increased awareness of hunger and hardship in other areas of the world could lead to a decrease in food waste, increased volunteering, innovation for sustainable development, and more.

Social Opportunities for Stakeholders

Businesses depend on cost-effectiveness, particularly in labor productivity, to survive a recession. As a result, these businesses appear to face a trade-off between maintaining labor productivity and remaining economically viable. This dependency is far more complex in the 2020 recession due to additional health and safety operational costs. Not only is there an increased desire to continue employing workers who depend on these wages, but also limitations on when, where, and how many people can work at a time. Beyond that, the pandemic creates turbulent demand, making the feasible cost of operating a risky estimate.

At this point in the 21st century, many leading companies have prioritized implementing social sustainability throughout their operations. There is increased awareness and transparency in the B2B and B2C relationships on sustainable labor conditions and user consumption. The issue now shifts to prioritizing these practices amidst economic turmoil and leveraging them to recover from this recession. Beyond this, businesses have an opportunity to innovate new ways to provide societal value, building upon their resiliency to future recessions.

Recession recovery and resiliency are not the only benefits of implementing social sustainability. There is a sense of purpose and responsibility enjoyed by contributing to the greater good of society. The bigger picture is improving welfare for all through collective action. Particularly during a recession, the basic needs of many are threatened, and businesses have an opportunity to benefit while relieving concerns of their workers, those involved in their supply chain, their consumers, and anyone they interact with.

The UN Global Compact has created 10 principles for corporate social responsibility that aid in understanding the importance of individual action. These principles are related to Human Rights, Labor, Environment, and Anti-Corruption ("The Ten Principles of the UN Global Compact", 2020).

The principles are:

1. Businesses should support and respect the protection of internationally proclaimed human rights.
2. Businesses should make sure that they are not complicit in human rights abuses.
3. Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining.
4. Businesses should eliminate all forms of forced and compulsory labor.
5. Businesses should uphold the effective abolition of child labor.
6. Businesses should uphold the elimination of discrimination in respect of employment and occupation.
7. Businesses should support a precautionary approach to environmental challenges.
8. Businesses should undertake initiatives to promote greater environmental responsibility.
9. Businesses should encourage the development and diffusion of environmentally friendly technologies.
10. Businesses should work against corruption in all its forms, including extortion and bribery.

Each of these principles is crucial to humanity and sustainability. In times of any discomfort, whether it be biological, physiological, social, mental, or financial, people are tried. Adhering to these principles is not only necessary but is the foundation of real recovery and resiliency.

During a recession, some employers inevitably cut costs in their labor force, which could violate one or more of these principles. Establishing and communicating these values early on, or in times of economic stability, will create a culture of integrity. This public identity of integrity will, therefore, be much harder to violate during times of desperation. As a result, these employers are more likely to realize innovative solutions to layoffs, which once seemed inevitable.

The uniqueness of the 2020 recession makes these principles even more pertinent. Violating these principles during hypersensitivity to health will attract public scrutiny and further damage businesses. However, social sustainability amidst a pandemic is not only a means of survival but also an opportunity to thrive. Businesses may be tempted to cut costs by lowering wages, worsening labor conditions, or exploiting cheap labor throughout supply chains. Companies that withstand these temptations and consider the long-term benefits of holding strong to these principles will reap the greatest benefits.

To illustrate the benefits of a sustainable long-term strategy, consider Nokia's Bridge program. The Finnish telecommunications company was forced to massively restructure, laying off 18,000 employees in 13 countries. Senior leaders developed the Bridge program to help employees successfully pivot from the unfortunate situation. The program aimed to maximize the percent of employees who knew their next step the day they left the firm. Nokia fostered a new standard for large employers and their responsibility to employees and surrounding communities (Sucher, 2019).

The program provided 5 paths for furloughed employees, notified far in advance:

1. Find another job at Nokia: implemented retention programs for R&D and additional task forces.
2. Find another job outside of Nokia: offered job search support, career coaching, resume clinics, job fairs, and networking groups.
3. Start a new business: offered grants for employees to start their own business based on their economic viability; provided coaching, mentorship, training, and network support with their grants.
4. Learn something new: provided financial support and grants for employees looking to acquire new skills.
5. Create a new path: financial support for less conventional paths such as volunteering.

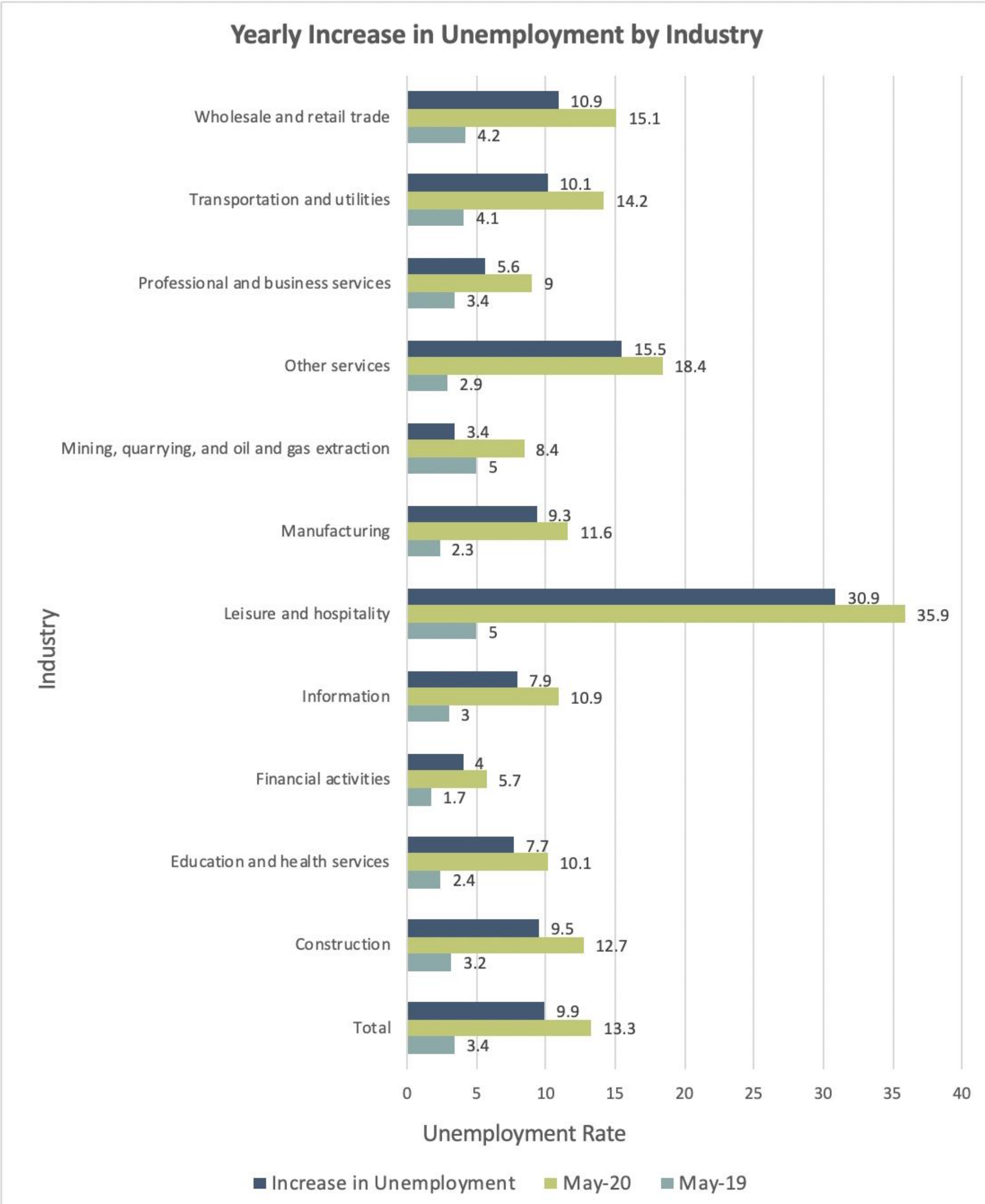
As a result, 60% of laid-off employees knew their next step leaving Nokia, 1,000 businesses were created through Bridge start-up grants, and 85% of participants in Finland reported satisfaction with the program and 67% globally. The entire program only comprised 4% of Nokia's restructuring costs and avoided many repercussions of layoffs. This transparency paid dividends for the business and their employers by building a reputation for trust and integrity. The company did not experience a drop in employee engagement, product quality, or productivity (Sucher, 2019).

Although Nokia is a large business, this mindset is applicable on a smaller scale. Small businesses may not have the infrastructure or funds for a program build-out such as Bridge, but there are creative ways to maximize employment in a recession. Alternatives to consider prior to layoffs during a recession:

- Implement hiring freezes for non-essential personnel
- Encourage attrition for those that are nearing the end of their career
- Promote vacation time use
- Reduce working hours or organization-wide shorter weeks
- Offer job sharing to retain skills

The relevant actions and benefits of sustainable development will differ by industry. The 2020 recession shows an especially hard hit to certain industries, resulting in concentrated damage to a few in particular. As seen in Chart 4, the Leisure and Hospitality industry has experienced a 30.9% increase in unemployment since May 2019.

Chart 4: Unemployment rates by industry in 2019, 2020 and the annual growth as of May 2020 (BLS, 2020)



It is important to consider that certain companies and industries may not face economic hardship at all, or even experience growth due to the nature of the recession. In 2020 for example, video-conferencing platforms, the fitness industry, and household necessities have blossomed in a world where in-person contact has been eliminated. These companies can also reap the benefits of practicing social sustainability and might even feel a greater sense of responsibility to do so during an economic downturn.

Practices companies can implement include:

- Hiring freelance and contingent work when possible
- Finding partnerships to implement sustainability and create jobs throughout business operations
- Innovating new streams of business that require more jobs
- Providing widespread accessibility of the products that are in-demand
- Finding ways to contribute to developing or impoverished areas
- Offering services at a reduced cost, or as an incentive for sustainable action

Rewards for implementing and maintaining social sustainability throughout a recession:

- Happier, more productive workers
- Greater adaptive capacity - less time and money into re-hiring and retaining employees
- Positive press and strengthening reputation
- Competitive edge
- Reduced costs for worker's compensation and lawsuits for labor conditions
- Sophisticated innovation
- Talented workers that have been furloughed in the industry
- Greater purpose in work
- Increased consumer confidence and employee loyalty

Ultimately, the businesses that refrain from "quick fixes" in cost-cutting, are more likely to survive this recession and be more profitable in the long run. What is more, these businesses will contribute to social equity and welfare for all of society by retaining as much employment as possible.

Reputation is often tested in times of hardship, and as stated by the Society for Human Resource Management, "In a down economy, the way an organization treats its employees, including those it is forced to let go, becomes a central factor in determining the company's public reputation." ("Can Sustainability Initiatives Survive in a Tough Economy?", 2009)

Environmental Recessionary Trends

During a recession or most any crisis, there is a focus on efficiency and effectiveness. When scarcity is heightened in an economic crisis, businesses are concerned about how to survive by doing more with less. Fortunately, sustainability has the same premise. That is, constantly considering how the planet can be more efficient, with its finite resources, to survive. Applying this environmental awareness to economic actions could be the saving grace of recovery and certainly would build resiliency for future economic crises (Winston, 2009).

"Going green" is predicated on living and operating in a way that uses less of the Earth's finite resources in a more efficient way. This is not possible without innovation, and there is no better time to innovate than when society is economically constrained to fewer resources. Not only is environmental sustainability a crutch for recovery, but also an opportunity to thrive.

The concern for climate change existed long before COVID-19, but being environmentally entrepreneurial is proving even more advantageous throughout a pandemic. For society at large, this is an opportunity to create jobs, educate, provide better resources, and contribute to a greater good. Beyond an opportunity, it is a responsibility to avoid future natural existential crises. According to the United Nations Sustainable Development Solutions Network, there has been serious scientific speculation linking the emergence of COVID-19 to biodiversity loss as a consequence of climate change. Researchers have examined the trend of deforestation driving wild species closer to human populations, increasing the likelihood of humans coming in contact with zoonotic viruses (Koundouri, 2020). This created concern that climate change will accelerate the emergence of new viruses.

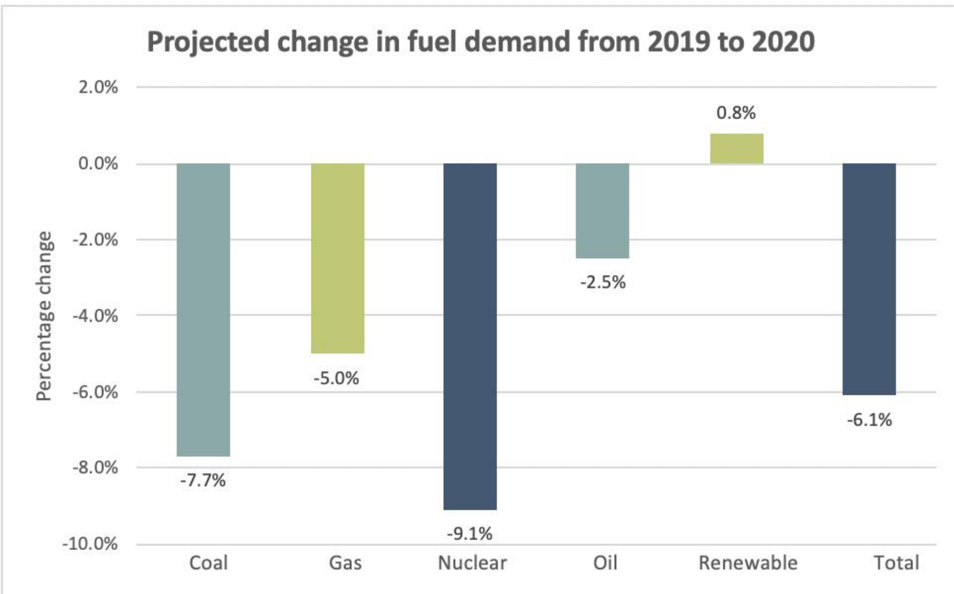
While climate change has the potential to threaten many more lives than COVID-19, the true impact can be diluted through multiple crises over an extended period of time. As floods, epidemics, and other natural disasters occur more frequently, the severity of climate change as a whole may be discounted. While the linkage between climate change and this pandemic is only speculative, climate change can certainly spark future crises with similar far-reaching destruction as 2020 has shown. It is important to place COVID-19 in the macro perspective of the potential destruction of climate change. Humanity is undoubtedly stressed in the face of a pandemic; however, prioritizing the likely source of future disasters could mean recovery now and resiliency for the future.

The long-term environmental effects of the 2020 recession are indeterminable at this point. Nonetheless, reflecting on the 2008 financial crisis can provide insight. John Kenny's research on economic conditions and support for the prioritization of environmental protection during the great recession suggests that public support for environmental prioritization is more heavily dependent on low unemployment rather than economic growth. More specifically, Kenny found that countries with the highest increase in unemployment had roughly the largest decrease in individuals' environmental protection concerns (Kenny, 2019). His findings parallel the hypothesis that humans may consciously or subconsciously feel a trade-off in their concern for climate change versus their concern for economic stability. This perceived trade-off could prolong economic instability while accelerating climate change if there is a lack of awareness on how the two can actually be each other's solution.

History shows a pattern of self-reliance in times of economic security and government reliance in times of economic uncertainty. How governments act now will be a determining factor of the environmental impacts of this recession. To relieve the tension between economic concerns and environmental concerns, governments can turn to the macroeconomic solution of sustainable development, creating jobs while helping the environment. So far the United States has supplied trillions of dollars in economic stimulus both to provide income for unemployed households and to save large fossil-fueled industries such as airlines and tourism. While this may provide short-term economic relief, it does not provide real employment nor underscore the importance of environmental initiatives during this recession. From a macroeconomic standpoint, these stimulus plans and programs must prioritize the environment just as much as the economy for long-term, sustainable recovery. In doing so, there is a larger job market for sustainable development and a greater opportunity for cost-effectiveness with renewable energy.

There is a notable positive consequence of this crisis, the temporary decrease in carbon emissions and global energy demanded. According to the International Energy Agency, (Global Energy Review, 2020), there was a 3.8% decrease in global energy demand in the first quarter of 2020 in comparison to 2019. The IEA also projects a 6% drop in 2020 if lockdowns continue as predicted. As can be seen in Chart 5, renewable is the only type of fuel projected to increase in demand throughout 2020 in comparison to 2019. This finding further supports the argument that job creation should be focused on sustainable development, as that is where demand is increasing. The renewables industry has immense opportunities for labor, with the lack of infrastructure for solar energy, wind energy, and the smart grid. This industry is perhaps the most obvious overlap of advantageous macroeconomic and environmental recovery.

Chart 5: Projected change in primary energy demand by fuel in 2020 relative to 2019 (IEA, 2020)



Environmental Opportunities for Stakeholders

Reaping the economic benefits of green infrastructure development will require initiative at the government level, but also implementation at the individual stakeholder level. Prior to COVID-19, the Business and Sustainable Development Commission released a report supporting the claim that the sustainable business can unlock at least USD 12 trillion in new market value, and repair the economic system (The Business and Sustainable Development Commission, 2017). If businesses are successful in using this economic stagnation as an opportunity to not only maintain but also accelerate green development, major issues could be addressed simultaneously on a micro and macro level. Individual stakeholders will benefit from more cost-efficient resources and operations, resulting in the increased use of clean energy thus reducing pollution, particularly in urban areas that improve the health and safety of society, an especially pressing concern amidst a global pandemic. Finally, this collective action will better address climate change and reactivate progress towards the Global Goals for Sustainable Development.

The most evident and generally accepted strategy for economic recovery and resiliency in the future is through job creation. In times of economic turmoil, many business sectors will turn to government stimulus and policy to finance business operations and maintain a labor force. Fiscal policy on this front remains a controversial topic dependent on policymakers and public support. On a micro level, businesses have little control over these measures, but can control their own priorities to survive and thrive throughout this recession. It is therefore crucial that individual stakeholders remain aware of the importance and opportunities that lie in their own sustainable development, particularly during a recession. Incorporating "green" operations throughout this economic downturn can cut efficiency costs and build rapport. The alternative of cutting costs through layoffs, furloughs, and eliminating sustainability initiatives can be far more costly in the long term.

Simply put, the business case for sustainable development is stronger than ever:

1. The price of renewable energy is cheaper than fossil fuels.
2. Sustainability is now a widely adopted, cross-sector integration.
3. The last decade proved that sustainability is profit-driving.

A specific initiative for any business that uses physical buildings for operation is becoming LEED-certified. Leadership in Energy and Environmental Design (LEED) is the most widely used green building rating system. Green building benefits the triple bottom line, and the cost-effectiveness could kickstart individual operations throughout a recession. According to the United States Green Building Council, LEED buildings report a 20% reduction in maintenance costs than typical commercial buildings. Operating costs decrease by almost 10% in one year following green building retrofits. Furthermore, millions of jobs have been created, and billions of dollars generated through green building. Prioritizing green building addresses both issues of climate change and recession ("Benefits of Green Building", 2020).

When determining the cost-effectiveness of energy, renewable energy is becoming cheaper, more efficient, and more urgent as the global climate continues to change. Lazard's Levelized Cost of Energy Analysis versions 12.0 and 13.0 show the levelized cost of renewable energy sources such as onshore wind and solar PV, decreasing by 4% from 2018 to 2019. The levelized cost of energy is the unsubsidized cost per hour per megawatt including installation. This cost is becoming more competitive with the marginal cost of conventional energy use, particularly, coal and nuclear power. As the levelized cost of renewable energy becomes increasingly competitive with conventional energy, it is more advantageous to switch to renewables because the bulk of the cost is upfront, upon installation. Making this switch will build resiliency for economic crises; the marginal cost of renewable energy will be cheaper in the long term as this trend continues. Furthermore, Lazard's study found in comparing the levelized cost of both conventional and renewable energy over the last decade, solar PV cost has decreased 89% to $40 MW/h, wind decreased 70% to $40 MW/h, while gas only decreased 37% to $175 MW/h, and nuclear and coal have both increased in cost to over $140 MW/h (Lazard, 2019).

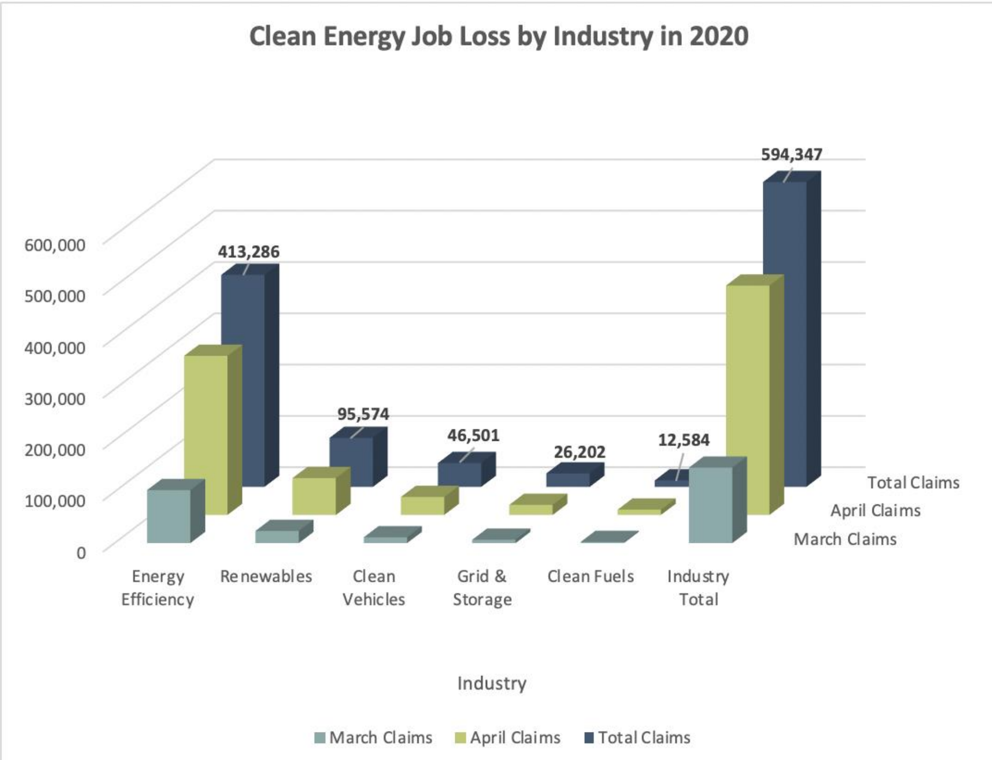
Other sustainable, cost-cutting measures that businesses can take (Leblanc, 2019):

- Conduct an energy audit- identify lighting, space heating, and cooling energy usage.

- Take advantage of local tax credits for energy efficiency, reduced emissions, solar energy and more.
- Educate investors on sustainability initiatives that can provide them with a greater ROI
- Utilize reusable packaging in production.
- Implement a Bring Your Own Device policy that significantly reduces energy usage and technology costs.
- Print only what is necessary and use both sides of the paper.
- Invest in water-efficient equipment.
- Use low-flow technology for utilities that use water, wherever possible.
- Install motion-sensor taps.
- Incentivize a “switch-off” initiative, raise awareness on energy consumption to reduce energy costs.
- Install in CFL or LED energy-efficient light bulbs that use 75% less energy and last up to 10x longer than traditional low-cost light bulbs.
- Utilize videoconferencing and allow employees to work remotely when possible.
- Use natural light when possible and be aware of over-lighting.
- Install solar panels.
- Adopt general office recycling measures.
- Consider purchasing used furniture for office décor.
- Install motion-sensor or occupancy-sensor lighting in areas not continually used.
- Avoid heating or cooling unused areas and keep areas closed when using HVAC.
- Use the hibernation mode or other energy-saving features on appliances when they aren’t in use.
- Replace desktops with laptops during the next computer upgrade as they consume less energy.

While there are many green measures that individual businesses can make external to stimulus, there is an even greater opportunity for widespread job creation and environmental benefit from the private sector that can be achieved with government fiscal policy. Chart 6 shows the job loss by industry in the clean energy sector in March and April of 2020. Identifying these sectors exposes where there is the most potential for needed employment. As shown, energy efficiency has experienced the greatest job loss amongst the major clean energy industries since March 2020.

Chart 6: Job loss by the clean energy industry in March and April of 2020 (Ellis, D. & Fazeli, S. 2020)



The opportunities for greener, more efficient business are endless. However, there are a few areas of emphasis that research and activists are calling attention to that offer great economic and climate benefits. For reference, the Oxford Smith School of Enterprise and the Environment has suggested the following projects that would allow private and public sector employment (Hepburn, O'Callaghan, Stern, Stiglitz & Zenghelis, 2020):

- Investment in clean infrastructure
    - Renewable energy assets
    - Carbon capture and hydrogen storage
    - Grid modernization
- Retrofits and renovations from building efficiency spending
    - Insulation and heating improvements
    - Domestic energy storage systems
- Education and training for immediate COVID-19 unemployment and preparation to a decarbonization shift
- Ecosystem resilience and regeneration from natural capital investment
    - Carbon-rich habitats restoration
    - Climate-friendly agricultural development
- Spending on clean R&D

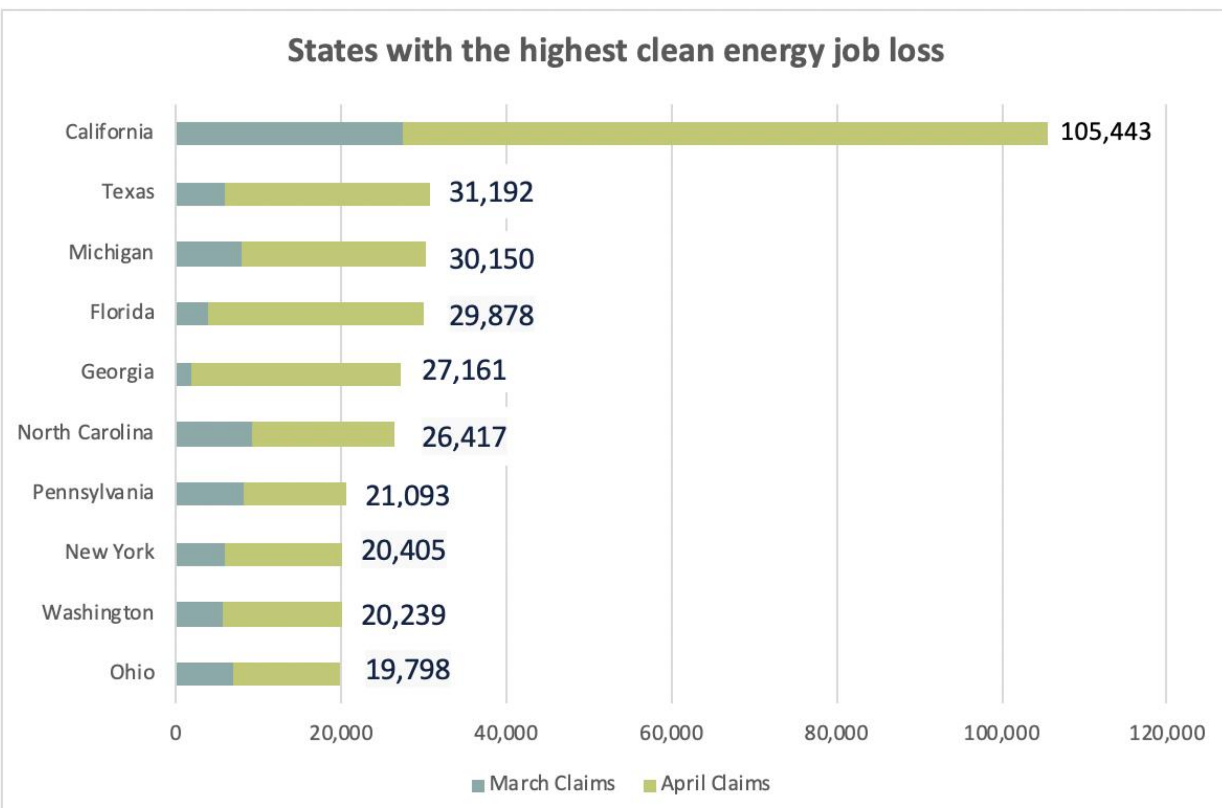
This report by the University of Oxford also references a model on projected clean energy job creation per USD 1 million investment. The model suggests that each $1 million in spending would generate roughly 7.72 full-time jobs in the energy efficiency of 7.49 full-time jobs in renewables infrastructure, but only 2.65 jobs in fossil fuel jobs. These findings propose the greatest opportunity for immediate employment relief, with long-term environmental relief (Hepburn et al., 2020).

Since COVID-19, policymakers appear to have pushed sustainability to the back-burner and are prioritizing immediate household financial relief, pursuing bailouts in fossil fuel industries without green conditions. The opportunity for immediate financial relief is also possible with shovel-ready green jobs that can be created on the micro-level with government support. These job creation opportunities include:

- Residential energy efficiency retrofits
- Commercial energy efficiency retrofits
- Afforestation
- Parkland expansion
- Rural ecosystem enhancement
- Carbon capture infrastructure

While there has not been much public policy capitalizing on these opportunities, environmentalists remain optimistic that these industries will recover quickly and will attract more workers as most of these jobs require minimal preparation and training time and can be easily adapted to social distancing requirements (Lacey, 2020). Employers of sustainable companies invest quality time and money in training and have a greater need to “build back better,” so there is confidence in the re-employment of higher-level clean energy workers. These employers can prepare to hire back workers as quickly as possible as COVID-19 restrictions are lifted. Chart 7 shows the states that have experienced the most clean energy job loss. These states, in particular, can benefit from clean energy development and employment.

Chart 7: 10 states with the most jobs lost in clean energy in March and April 2020 (E2, 2020)



Clean energy is the focal point of economic and environmental recovery. However, there are less intuitive opportunities for massive employment. Kate Aronoff from *The New Republic* points out the oil industry as an example. These fossil-fueled workers could be leveraged to capture carbon or clean up extraction sites as a source of income while stimulating the environment. Similar green conditions could be linked to the government aid provided to oil and gas CEOs to be more environmentally and economically efficient throughout the recession (Aronoff, 2020). Large business leaders may not take on such an initiative without government mandates, but small private businesses can take matters into their own hands. Instead of outright layoffs and furloughs, businesses can leverage financial stimulus and tax programs, such as the NC partial unemployment insurance, to continue environmental development.

Government prioritization of climate change in fiscal policy is uncertain. What is certain is that the course of climate change can only be altered by widespread, large-scale collective action. The individual stakeholders and companies that capitalize on the environmental and economic opportunities of this recession will be the ones to recover the strongest.

Financial Recessionary Trends

Since this recession is unlike any in history, its recovery will be unlike any in history. Economists are predicting a U-shaped recovery considering genuine expansion is heavily dependent on a stable, accessible vaccine (Amadeo, 2020). Key economic indicators of Q1 and Q2 of 2020 are daunting, to say the least. However, it is important to consider that this downturn is not expected to last as long as a depression. A timely recovery depends on the understanding and preparedness of financial opportunities moving forward. The figures below will provide a general understanding of the United States' macroeconomic status and projected economic behavior. Chart 8 depicts the economic outlook for 2020, 2021, and 2022 in accordance with Federal Reserve data ("FOMC Projections materials", 2019).

Economic Growth:

- In the first quarter of 2020, the U.S. economy contracted 5%
- In the second quarter of 2020, the U.S. economy is predicted to have contracted 45%
- Throughout the whole year of 2020, the U.S. economy is projected to contract by 6.5-7.2%

Unemployment in April 2020 alone:

- 20.5 million jobs lost in total
- 7.65 million jobs lost in leisure and hospitality
- 2.1 million jobs lost in social assistance and healthcare
- 2.1 million jobs lost in the retail industry
- Roughly 1 in 7 employees lost their job

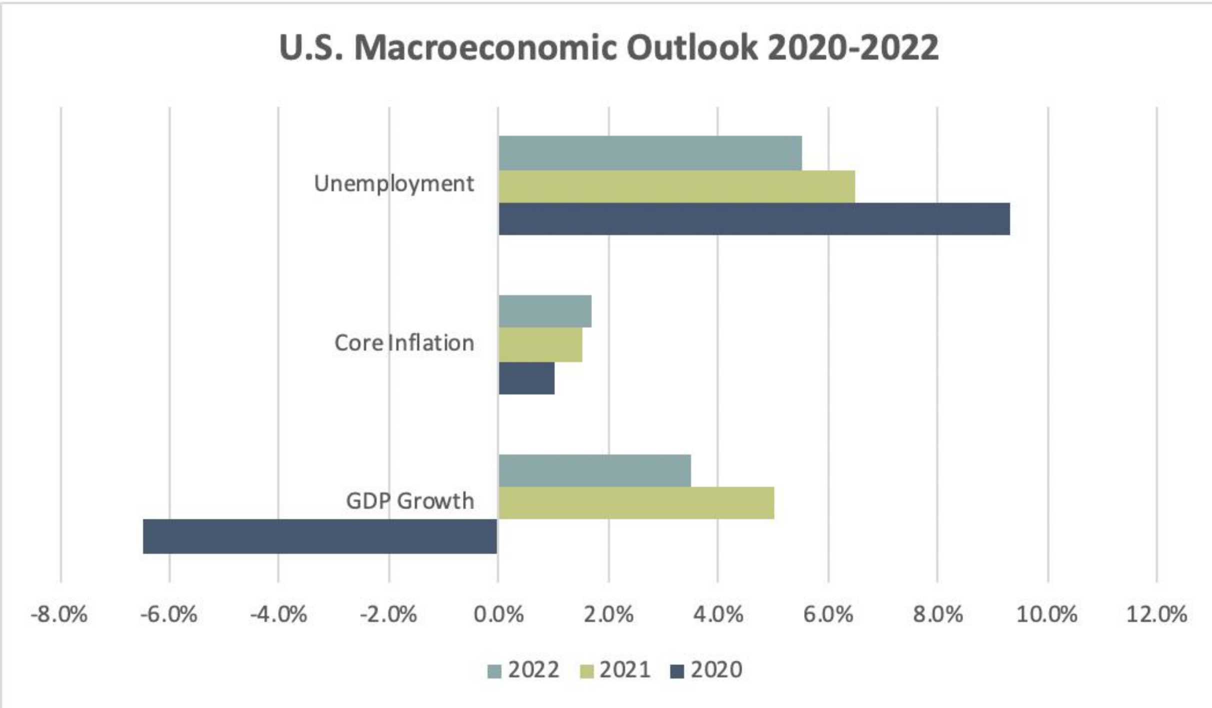
Inflation:

- 2020 is projected to have an average inflation rate of .8%
- 2021 is projected to have an average inflation rate of 1.6%
- 2022 is projected to have an average inflation rate of 1.7%

Government Stimulus:

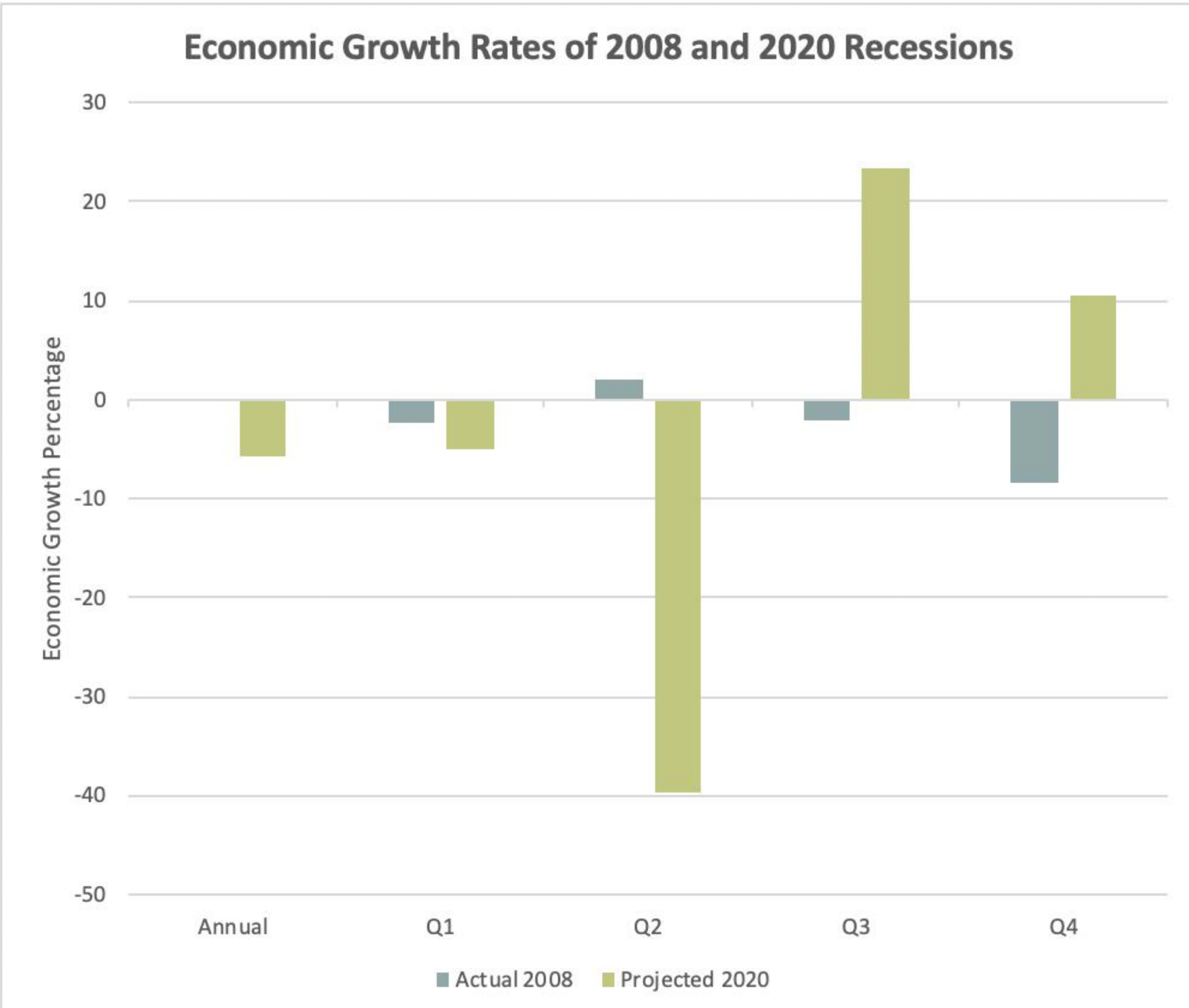
- Coronavirus Preparedness and Response Supplemental Appropriations Act (3/6/2020): provided $8.3 billion to federal agencies to respond to the pandemic and of that, $6.2 billion went to the Department of Health and Human Services for vaccine research.
- Families First Coronavirus Response Act (3/18/2020): provided $3.5 billion for employees' paid sick leave, unemployment benefits, and insurance coverage for COVID-19 testing. Additionally, the act increased Medicaid funding and aid for the poor through food assistance.
- Coronavirus Aid, Relief, and Economic Security Act (3/27/2020): a $2 trillion stimulus effort including:
    - $293 billion in stimulus checks to eligible taxpayers
    - $268 billion in expanded unemployment insurance
    - $150 billion for state and local governments
    - $510 billion in expanded lending for businesses and local governments
    - $377 billion in new loans and grants for small businesses
    - $127 billion to hospitals for ventilators and other equipment
- Paycheck Protection Program and Health Care Enhancement Act (4/24/2020): provided $483.4 billion for small businesses, hospitals, and testing.

Chart 8: Projected United States Macroeconomic Outlook ("FOMC Projections materials", 2019).



This recession is predicted to be deeper, but not last as long as the 2008 financial crisis. Chart 9 shows how the two recessions compare, in terms of the 2020 projected economic indicators.

Chart 9: Projected 2020 economic indicators compared to the 2008 financial crisis (Amadeo & Berry-Johnson, 2020)



It is also important to consider that recessions tend to hit advanced economies harder than emerging economies, in terms of GDP growth. This trend has continued throughout 2020 so far, as emerging economies have experienced a lower reduction in GDP growth than advanced economies shown, in Chart 10. However, this does not exempt the consideration of emerging economies from the global economic recovery. Emerging economies are more vulnerable from a health standpoint, without widespread access to health services, particularly during a pandemic. This trend shows an even larger opportunity for global cooperation and leveraging resources to create jobs and recover sustainably.

Chart 10: Real GDP Growth in advanced, emerging and world economies (IMF, 2020)

According to Dr. Daniel Bachman from Deloitte Insights, the United States Economic Recovery is dependent on 4 factors (Bachman, 2020):

1. Most importantly, the medical response and containment of COVID-19
2. The economic impact of sectors indirectly negatively impacted by COVID-19
3. The global impact of the pandemic
4. The level of public trust extracted from the government and business leaders

Bachman also argues that the economy will not return to pre-COVID-19 for two main reasons:

1. Widespread change in demand patterns
2. Changing business patterns that slow productivity

Understanding the current macroeconomic climate informs important decisions in the near future. Business, as usual, will shift in unrecognizable ways. Physical retailers face replacement by e-commerce retailers, virtual meetings could become the norm, e-learning platforms will be essential, and supply chains, in general, will restructure for resiliency. Sustainable development must be the foundation of any and all large-scale operations to survive these shifts.

Included in the Business & Sustainable Development's 2017 flagship report "Better Business, Better World," the CEOs and civil society leaders determined that sustainable development models could unlock 380 million jobs by 2030, in addition to the more than USD 12 trillion these models can provide. These models are centered on the global goals related to social equity, hunger, poverty, and education. During a time of immense job loss and an obvious shift in demanded skills, these issues could be exacerbated or they could be solved. Today's macroeconomic conditions are already historically significant, but also have the potential to shape history and the wellbeing of society.

The Commission explains that two conditions are necessary to successfully unleash these economic benefits and gain real traction on global sustainable development. First is "innovative financing from both private and public sources." Second is a "new social contract." Maximizing profitability for everyone requires business, government, and society to cooperate and rebuild trust in each other. A social contract modeled on old human rights and social justice principles would have long-term financial benefits for everyone involved. If the global goals are generally accepted, society could capitalize on this immense opportunity of a universal, profitable growth model for business (The Business and Sustainable Development Commission, 2017).

Financial Opportunities for Stakeholders

In the last decade, the private sector has shifted from recognizing the need for sustainable development in business practices, to actually implementing those practices as they prove more imperative. Now that most businesses have adopted a sustainable mindset, the 2020 recession will be a test of resiliency and a large market for innovation.

The perceived tradeoff between corporate profit and sustainable development is evident in the cost-cutting measures taken by businesses during an economic downturn. Historically, it has been challenging for small businesses, in particular, to maintain their current level of employment and sustainable business practices when every penny matters. However, there are some important ways that individual stakeholders can benefit by shifting strategies to protecting their employees and sustainable initiatives, especially in financially challenging times.

Common business benefits to implementing sustainable practices (Rogers, 2016):

1. Competitive advantage and brand awareness
2. Reduced costs by increased productivity
3. Greater ability to comply with regulations
4. Attract and retain more talent
5. Increased funding and potential investors
6. Reduce waste
7. Happier shareholders

Sheila Bonini and Steven Swartz of McKinsey described the business benefits to sustainable development in three major categories: growth, returns on capital and risk management. Sustainability offers growth for individual businesses through new markets with green opportunities, innovation and product development, and the composition of their business portfolio. The business can reach higher returns on capital through green sales and marketing, implementing sustainability throughout its value chain, and operating sustainably. Finally, businesses can better manage risk because of sustainability's regulatory management, reputation management, and operational risk management (Bonini & Swartz, 2014).

One of the most general, widespread steps businesses can take during times of financial stagnation is to make the switch to solar power. EnergySage market data shows that an average corporate property owner spends about $2,000 per month on electricity bills. There is an opportunity to trim this electricity bill by nearly 75% with a switch to solar. Switching to solar power can cut costs immediately after the initial investment but provides even greater long term financial gains. EnergySage found that businesses can pay off these solar installation costs in 3 to 7 years. Once paid off, energy costs can drop to zero for the remainder of the solar panel lifespan, typically 25-35 years (Leblanc, 2019). Lifting this large cost burden makes businesses more resilient to future crises.

Additional benefits of solar panel installation include:

- Federal Investment Tax Credits - 26% for projects that begin in 2020, 22% for projects beginning in 2021 (SEIA, 2020)
- Maintenance-free, reliable energy source - eliminates recurring maintenance costs to conventional energy
- Supporting a green-business approach - creating a favorable image for consumers

The federal government provides tax incentives for a variety of sustainable technologies:

- Solar technologies
- Fuel cells
- Small wind turbines
- Geothermal systems

- Microturbines
- Combined heat and power

There are plentiful financial benefits of becoming socially sustainable. As explained in this report, many businesses cut human capital during economic downturns. This is not a novel trend; however, there are alternatives that help businesses maintain employment during hardship. Many people are familiar with unemployment insurance provided through a joint federal-state program that currently is providing $600 each week to each unemployed person (as of July 2020). This is a well-known aspect of the 2020 Coronavirus Aid, Relief, and Economic Security (CARES) Act. Section 2108 of the CARES Act is less utilized and provides short-time compensation for employees. This policy allows employers to reduce layoffs by sharing work across multiple employees, retaining training and skills costs. The employees can then file for STC with the state and collect unemployment insurance benefits proportionate to their lost hours. This also allows employees to maintain health care and other non-wage benefits that they normally exercise, in addition to an increased sense of job security. Most states also have partial unemployment insurance programs, an alternative if an STC program is unavailable. Professor Paige Ouimet describes the nuances of these policies in her article, “The Long-term Benefits of Short-Time Compensation.” She explains that partial or short time unemployment insurance is a helpful tool in reducing long-term unemployment that the U.S. and other countries are facing in this recession (Ouimet, 2020).

The reality is that laid-off workers are going to flood the job market at the same time creating a supply and demand misalignment. Those who remain unemployed will likely face significant job discrimination. If employers are able to keep as many of their workers at least partially employed as possible, they will save time and money on recruiting and training in the near future and will recover much more quickly by keeping their employees’ skills current. Exploring and utilizing these tools will boost the recovery of individual businesses and increase profitability long term.

Aspiring entrepreneurs cannot be excluded from this conversation. This may be a favorable time to start a business with a sustainable mission. There is a wide range of industry opportunities for new leadership to emerge and thrive with sustainable development. Included in the Business and Sustainable Development Commission’s claim that sustainable business can unlock at least USD 12 trillion in new market value and repair the economic system is a call to business leaders to take a leap of action. The commission states that, "Business leaders need to strike out in new directions to embrace more sustainable and inclusive economic models." However, small businesses should not, and cannot afford, to wait on industry players to make these changes. This recession is an opportunity for every business to build rapport, make an impact, and increase profitability throughout recovery. Furthermore, it is an opportunity for entrepreneurs to get a head start while making a difference. The commission outlines the 60 biggest market opportunities related to delivering global goals (“Better Business, Better World”, 2017). These are the opportunities that can be utilized on a micro-level:

Food and Agriculture	Cities	Energy and Materials	Health and Well-Being
Reducing food waste in value chain	Affordable housing	Circular models - automotive	Risk pooling
Forest ecosystem services	Energy efficiency - buildings	Expansion of renewables	Remote patient monitoring
Low-income food markets	Electric and hybrid vehicles	Circular models - appliances	Telehealth
Reducing consumer food waste	Public transport in urban areas	Circular models - electronics	Advanced genomics
Product reformulation	Car sharing	Energy efficiency - non-energy intensive industries	Activity services
Technology in large-scale farms	Road safety equipment	Energy storage systems	Detection of counterfeit drugs
Dietary switch	Autonomous vehicles	Resource recovery	Tobacco control
Sustainable aquaculture	ICE vehicle fuel efficiency	End-use steel efficiency	Weight management programs
Technology in smallholder farms	Building resilient cities	Energy efficiency - energy intensive industries	Better disease management
Micro-irrigation	Municipal water leakage	Carbon capture and storage	Electronic medical records
Restoring degraded land	Cultural tourism	Energy access	Better maternal and child health
Reducing packaging waste	Smart metering	Green chemicals	Healthcare training
Cattle intensification	Water and sanitation infrastructure	Additive manufacturing	Low-cost surgery
Urban agriculture	Office sharing	Local content in extractives	
	Timber buildings	Shared infrastructure	
	Durable and modular buildings	Mine rehabilitation	
		Grid interconnection	

As the knowledge and awareness of sustainability grow, the financial benefits of sustainable development for businesses become more promising. The challenge now is prioritizing this progress throughout a recession. The foremost argument for a green recovery strategy is creating resilience for future economic downturns, in other words, to build back better. Choosing to reevaluate business operations, energy usage, labor conditions, and employment practices will be the saving grace for businesses throughout this unpredictable period, but could also drive economic recovery at the macro level. Each effort for renewable installations, expanding research, maintaining employment, and supply chain audits will create work for someone else. With the unprecedented level of unemployment in the world and the desperate need for sustainable action, this recession provides the platform to solve both. However, it will take collective action from individual organizations to reap the full economic, social, and environmental benefits this crisis is offering.

Integrating SDGs into Recovery

A current universal and comprehensive metric for sustainable development is the United Nations 17 Sustainable Development Goals (SDGs). These goals were adopted by all members of the United Nations in 2013 as the 2030 Agenda for Sustainable Development.

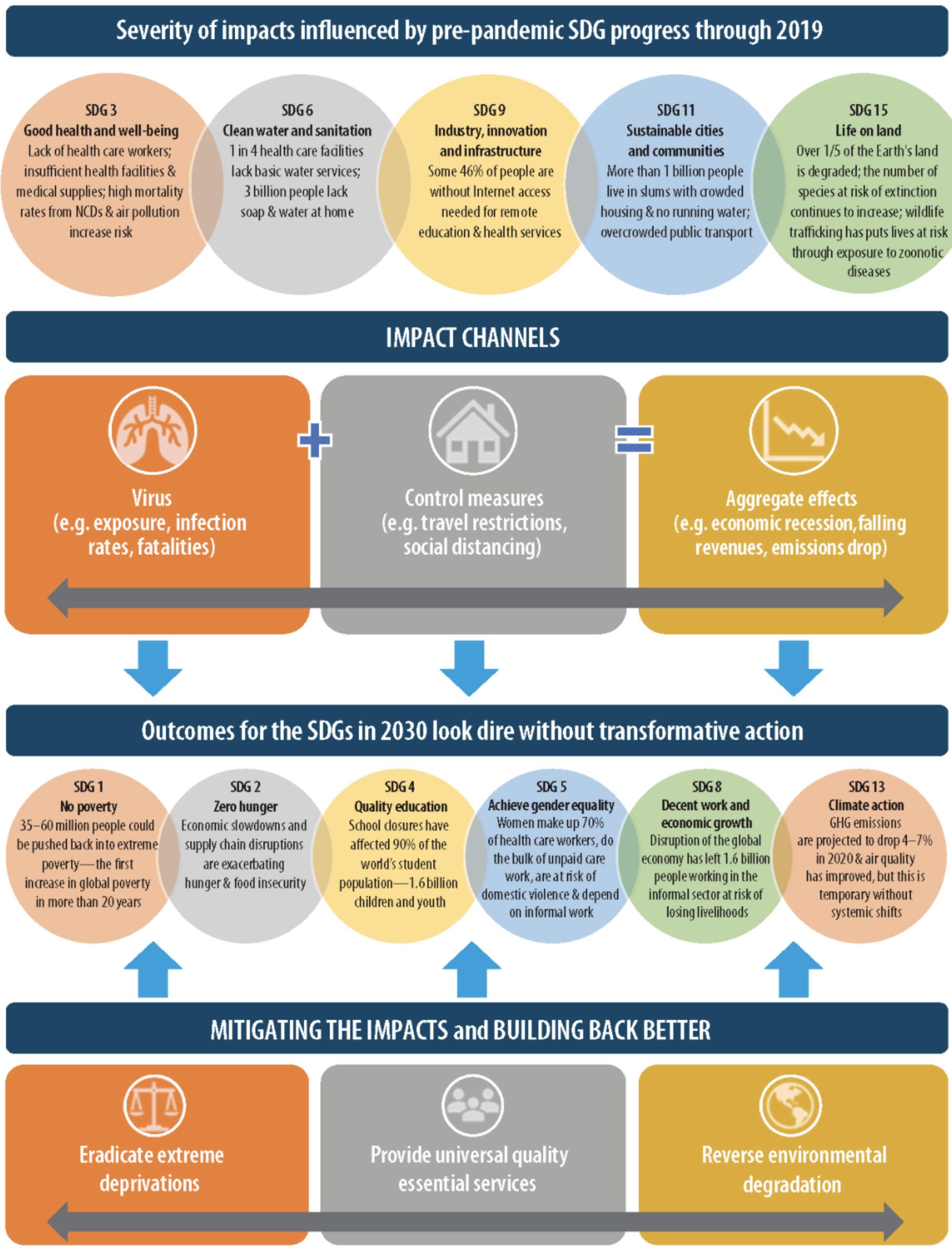
Sustainable Development Goals

The mission is to foster global partnerships amongst developed and developing countries for long-term peace and prosperity for people and the planet. With intricate benchmarks and diligent tracking, there has been significant progress on these goals since their adoption.

In June 2020, the UN released a policy brief on "Achieving the SDGs through the COVID-19 response and recovery." The brief includes concerns about eliminating the decades of progress and the future of the SDGs if economic recovery is approached with unsustainable strategies. UN/DESA suggests that there is an opportunity to support response and recovery in a way that propels SDG achievement but will require multilateral, comprehensive action, and global cooperation ("The 17 Goals", 2020).

The true impact on the SDGs and the trajectory of sustainable development will be unknown until the pandemic concludes and is dependent on the speed of recovery. However, the UN's most recent assessments are a good indicator of how SDG progress has been affected, how this progress has mitigated COVID-19 effects, and the impact channels of this pandemic on the SDGs (Mukherjee & Bonini", 2020).

Figure 1
Pathways of COVID-19 impact on select SDGs*



* This figure is indicative. All SDGs are impacted by COVID-19.

This figure shows what the post-COVID-19 world will look like if the SDGs are overlooked in economic recovery, and also the avenues of opportunity to build back better. Making the SDGs the focal point of private sector action can create a domino effect of progress from a social, environmental, and financial standpoint. If neglected, there could be more frequent global crises going forward, and degradation that may be irreversible.

Conclusion

Humanity is in a fragile state but continues to prove resilient. However, this resiliency cannot continue indefinitely without sustainability; humanity is too fragile. 2020 has forced the confrontation of global inefficiencies that cannot be neglected moving forward. The Center for Sustainable Enterprise has a great opportunity and responsibility to lead in educating better business practices.

The Center for Sustainable Enterprise has resources to spread this knowledge and to guide institutions to sustainable solutions. If 2020 has exposed anything, it is the importance of preparedness and innovation for the unexpected. Sustainable development addresses both.

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References

Akido-Addo, N & Solberg, E. (2020, April 28). AMid the coronavirus pandemic, the SDGs are even more relevant today than ever before. *The United Nations.* Retrieved from https://www.un.org/sustainabledevelopment/blog/2020/04/coronavirus-sdgs-more-relevant-than-ever-before/

Allegretto, S. (2018, June). A post-Great Recession overview of labor market trends in the United States and California. *Center on Wage and Employment Dynamics.* Retrieved from https://irle.berkeley.edu/files/2018/06/A-post-Great-Recession-overview-of-labor-market-trends-in-the-US-and-CA.pdf

Amadeo, K. & Barnier, B. (2020, May 29). History of Recessions in the United States. *The Balance.* Retrieved from https://www.thebalance.com/the-history-of-recessions-in-the-united-states-3306011

Amadeo, K. & Berry-Johnson, J. (2020, June 10). U.S. Economic Outlook for 2020 and Beyond. *The Balance.* Retrieved from https://www.thebalance.com/us-economic-outlook-3305669#oil-and-gas-prices

Amadeo, K. (2020, June 30). 2020 Recession. *The Balance.* Retrieved from https://www.thebalance.com/recession-2020-4846657

Anbumozhi, V. & Bauer, A. (2010, July 07). Impact of Global Recession on Sustainable Development and Poverty Linkages. *ADBI Institute.* Retrieved from https://www.adb.org/sites/default/files/publication/156082/adbi-wp227.pdf

Aronoff, K. (2020, March 18). Green Jobs Are the Answer to the Coronavirus Recession. *The New Republic.* Retrieved from https://newrepublic.com/article/156962/green-jobs-answer-coronavirus-recession

Aronoff, K. (2020, May 12). There are Green Jobs Hiding in the Oilfields. *The New Republic.* Retrieved from https://newrepublic.com/article/157677/green-jobs-hiding-oilfields

Bachman, D. (2020, June 15). United States Economic Forecast. *Deloitte Insights.* Retrieved from https://www2.deloitte.com/us/en/insights/economy/us-economic-forecast/united-states-outlook-analysis.html

Bajpai, S., Martini, L., & Wang, Y. (2019) Smart Grids Innovation Challenge Country Report 2019. *MI Smart Grids.* Retrieved from https://www.mi-ic1smartgrids.net/wp-content/plugins/dms/pages/file_retrieve.php?obj_id=154

Barufaldi, D. & Chappelow, J. (2020, June 08). A Review of Past Recessions *Investopedia* Retrieved from https://www.investopedia.com/articles/economics/08/past-recessions.asp

Bonini, S. & Swartz, S. (2014, July). Profits with purpose: How organizing for sustainability can benefit the bottom line. *McKinsey.* Retrieved from https://www.mckinsey.com/~/media/McKinsey/Business%20Functions/Sustainability/Our%20Insights/Profits%20with%20purpose/Profits%20with%20Purpose.pdf

Brown, G. & Ozoguz, A. (2020, July 16). UNC analysis: How COVID-19 relief package fell short – and ways to make the next package better. WRAL Tech Wire. Retrieved from https://www.wraltechwire.com/2020/07/16/unc-analysis-how-covid-19-relief-package-fell-short-and-ways-to-make-next-package-better/?utm_medium=email&utm_campaign=newsletter&utm_source=wral

The Business and Sustainable Development Commission. (2017). Release: Sustainable Business Can Unlock At Least Us$12 Trillion In New Market Value, And Repair Economic System. *Business & Sustainable Development Commission.* Retrieved from http://businesscommission.org/

Canfranc, M. (2020, April 20). From the Great Recession to the Great Pandemic: the differences between the 2008 and 2020 crises. *BBVA.* Retrieved from https://www.bbva.com/en/from-the-great-recession-to-the-great-pandemic-the-differences-between-the-2008-and-2020-crises/

Casselman, B. (2020, June 30). Worst Economy in a Decade. What's Next? *The New York Times.* Retrieved from https://www.nytimes.com/2020/04/29/business/economy/us-gdp.html

Chappelow, J. (2020, June 08). Unemployment and recession- What's the Relation? *Investopedia.* Retrieved from https://www.investopedia.com/ask/answers/032515/why-does-unemployment-tend-rise-during-recession.asp

Craner, A. (10, January 02). How Sustainability Survived the Great Recession. *Fast Company.* Retrieved from https://www.fastcompany.com/1509640/how-sustainability-survived-great-recession

Department of Economic and Social Affairs. (2020, June 11). UN/DESA Policy Brief #78: Achieving the SDGs through the COVID-19 response and recovery. *United Nations.* Retrieved from https://sdgs.un.org/goals

Department of Economic and Social Affairs. (2020). The 17 Goals. *United Nations.* Retrieved from https://www.un.org/development/desa/dpad/publication/un-desa-policy-brief-78-achieving-the-sdgs-through-the-covid-19-response-and-recovery/

Dockser, B. & Kelo, A. (2020, April 29). Why This CEO Thinks Prioritizing Sustainability Can Help Us Get Through The Recession. *The Rising.* Retrieved from https://therising.co/2020/04/29/why-this-ceo-thinks-prioritizing-sustainability-will-help-us-overcome-the-recession/

Ellis, D. & Fazeli, S. (2020). 2020 U.S. Energy & Employment Report. *Energy Futures Initiatives and National Association of State Energy Officials.* Retrieved from https://static1.squarespace.com/static/5a98cf80ec4eb7c5cd928c61/t/5e78b3c756e8367abbd47ab0/1584968660321/USEER+2020+0323.pdf

Ettlinger, M. (2009, November 30). Job Creation in a Recession: The Basics. *Center for American Progress.* Retrieved from https://www.americanprogress.org/issues/economy/news/2009/11/30/6923/job-creation-in-a-recession-the-basics/

Federal Open Market Committee. (2019, June 19). Economic projections of Federal Reserve Board members and Federal Reserve Bank presidents under their individual assessments of projected appropriate monetary policy. *The Federal Reserve.* Retrieved from https://www.federalreserve.gov/monetarypolicy/fomcprojtabl20190619.htm

Green Business Bureau (2019, June 17). Financial Benefits of an Eco-Friendly Business. *Green Business Bureau.* Retrieved from https://greenbusinessbureau.com/blog/financial-benefits-of-an-eco-friendly-business/

Goal 13: Climate Action, Goal of the Month. (2019, April 03). Green economy could create 24 million new jobs. *The United Nations.* Retrieved from https://www.un.org/sustainabledevelopment/blog/2019/04/green-economy-could-create-24-million-new-jobs/

Gorner, S. & Bonini S. (2011, October 01). The Business of Sustainability. *McKinsey & Company.* Retrieved from https://www.mckinsey.com/business-functions/sustainability/our-insights/the-business-of-sustainability-mckinsey-global-survey-results#

Guerriero, C., Haines, A., & Pagano, M. (2020, June 08). Health and sustainability in post-pandemic economic policies. *Nature Sustainability.* Retrieved from https://www.nature.com/articles/s41893-020-0563-0

Guterres, A. (2020, March 31). The recovery from the COVID_19 crisis must lead to a different economy. *The United Nations.* Retrieved from https://www.un.org/en/un-coronavirus-communications-team/launch-report-socio-economic-impacts-covid-19

Harvey, F. (2020, March 24). COVID-19 economic rescue plans must be green, say environmentalists. *The Guardian.* Retrieved from https://www.theguardian.com/environment/2020/mar/24/covid-19-economic-rescue-plans-must-be-green-say-environmentalists

Harvey, F. (2020, May 20). Heed lessons of the 2008 crisis, experts warn global leaders. *The Guardian.* Retrieved from https://www.theguardian.com/world/2020/may/20/heed-lessons-of-2008-crisis-experts-warn-global-leaders

Harvey, F. (2020, May 25). Green stimulus can repair global economy and climate, study says. *The Guardian.* Retrieved from https://www.theguardian.com/environment/2020/may/05/green-stimulus-can-repair-global-economy-and-climate-study-says?fbclid=IwAR3ALbARCbncWbEbdBLaxUK_m2YSQLic6a2KyCzpGjn77w0ROgcuPxm5QqU

Hepburn, C., O'Callaghan, B., Stern, N., Stiglitz, J., & Zenghelis, D. (2020, May 04). Will COVID-19 fiscal recovery packages accelerate or retard progress on climate change? *University of Oxford.* Retrieved from https://www.smithschool.ox.ac.uk/publications/wpapers/workingpaper20-02.pdf

History.com editors. (2020, February 28). Great Depression History. *History.* Retrieved from https://www.history.com/topics/great-depression/great-depression-history

Holder, M. (2020, May 08). Leading economists: Green COVID-19 recovery best for jobs and growth. *GreenBiz.* Retrieved from https://www.greenbiz.com/article/leading-economists-green-covid-19-recovery-best-jobs-and-growth

IEA. (2020). Global Energy Review 2020. *IEA, Paris.* Retrieved from https://www.iea.org/reports/global-energy-review-2020

ITC. (2020). Solar Investment Tax Credit. *Solar Energy Industries Association.* Retrieved from https://www.seia.org/initiatives/solar-investment-tax-credit-itc

Jordan, P. (2020, May 13) Clean Energy Employment Initial Impacts from the COVID-19 Economic Crisis. *bw Research Partnership.* Retrieved from https://e2.org/wp-content/uploads/2020/05/Clean-Energy-Jobs-April-COVID-19-Memo-FINAL.pdf

Kelly, J. (2020, March 27). Thousands of New Jobs are Being Created In Response To The Coronavirus. *Forbes.* Retrieved from https://www.forbes.com/sites/jackkelly/2020/03/27/thousands-of-new-jobs-are-being-created-in-response-to-the-coronavirus/#1d19c5c13d3f

Kenny, J. (2019, October 22). Economic conditions and support for the prioritization of environmental protection during the great recession. *Taylor & Francis Online.* Retrieved from https://www.tandfonline.com/doi/full/10.1080/09644016.2019.1680074

Kiersz, A. (2019, August 15). This Chart shows every recession the US has gone through since 1960, and how they compare to the economic meltdowns of other countries. *Business Insider.* Retrieved from https://www.businessinsider.com/Chart-number-of-recessions-in-us-around-the-world-2019-8

Koundouri, P. (2020, April 01). Never Waste a Good Crisis: For a Sustainable Recovery from COVID-19. *Sustainable Development Solutions Network.* Retrieved from https://www.unsdsn.org/never-waste-a-good-crisis-for-a-sustainable-recovery-from-covid-19

Kuepper, J. (2019, June 25). How Solar Subsidies Impact International Solar Stocks. *The Balance.* Retrieved from https://www.thebalance.com/how-solar-subsidies-impact-international-solar-stocks-4153809

Lacey, S. (2020, May 15). Layoffs Surge in Clean Energy. *Greentech Media.* Retrieved from https://www.greentechmedia.com/articles/read/layoffs-surge-in-clean-energy

Lazard (2019, November). Levelized Cost of Energy Analysis-Version 13.0. *Lazard.* Retrieved from https://www.lazard.com/media/451086/lazards-levelized-cost-of-energy-version-130-vf.pdf

Main, A., Kumar, A. Venneman, B., et al. (2020) A Human-First Approach as you Recover and Thrive. *Deloitte.* Retrieved from https://www2.deloitte.com/content/dam/Deloitte/global/Documents/About-Deloitte/COVID-19/gx-consumer-COVID-19-shaping-the-future-through-digital.pdf

McCann, A. (2020, July 16). States Whose Unemployment Claims Are Recovering the Quickest. *WalletHub.* Retrieved from https://wallethub.com/edu/states-unemployment-claims/72730/

Mishra, A. (2020, May 13). 3 Ways Governments Can Support a Sustainable Economic Recovery from COVID-19. *Forbes.* Retrieved from https://www.forbes.com/sites/ankitmishra/2020/05/13/3-ways-governments-can-support-a-sustainable-economic-recovery-from-covid-19/#50e718d67060

Murrat, J. (2018, August 21). Tax Credits and Deductions for your Green Business. *Small Business.* Retrieved from https://www.thebalancesmb.com/tax-credits-and-deductions-for-your-going-green-business-4052679

Murray, S. (2011, Jun 06). Sustainability: Recession's byproduct. *Financial Times.* Retrieved from http://libproxy.lib.unc.edu/login?url=https://search-proquest-com.libproxy.lib.unc.edu/docview/870395964?accountid=14244

Newsroom. (2020, January, 24). 2020 is the year of green jobs: these are the 10 most in demand. *Morning Future.* Retrieved from https://www.morningfuture.com/en/article/2020/01/24/2020-green-jobs-most-in-demand/833/

Ouimet, P. (2020, June). The Long-term Benefits of Short-time Compensation. *Kenan Insights.* Retrieved from https://kenaninstitute.unc.edu/kenan-insight/the-long-term-benefits-of-short-time-compensation/

Parletta, N. (2019, May 14). Going Green- What's Good For the Planet is Good For Business. *Forbes.* Retrieved from https://www.forbes.com/sites/natalieparletta/2019/05/14/going-green-whats-good-for-the-planet-is-good-for-business/#4be54d4d3201

Resources. (2020). COVID-19 Data Resources. *Global Partnership for Sustainable Development Data.* Retrieved from http://www.data4sdgs.org/resources/covid-19-data-resources

Roos, D. (2020, April 29). How the US Got Out of 12 Economic Recessions Since world War II. *History.* Retrieved from https://www.history.com/news/us-economic-recessions-timeline

Rogers, M. (2016, March 29). 6 Benefits of Becoming a Sustainable Business. *Environment + Energy Leader.* Retrieved from https://www.environmentalleader.com/2016/03/6-benefits-of-becoming-a-sustainable-business/

Sacristan, G. (2020, May 04). How the 2030 Agenda Can Help Us Tackle the COVID-19 Crisis. *IDB Invest.* Retrieved from https://blogs.iadb.org/bidinvest/en/how-the-2030-agenda-can-help-us-tackle-the-covid-19-crisis/

Schulze, E. (2020, April 08). The coronavirus recession is unlike any economic downturn in US history. *CNBC.* Retrieved from https://www.cnbc.com/2020/04/08/coronavirus-recession-is-unlike-any-economic-downturn-in-us-history.html

Sucher, S. (2019, May 03). There's a Better Way to do Layoffs: What Nokia Learned, the Hard Way. *LinkedIn.* Retrieved from https://www.linkedin.com/pulse/theres-better-way-do-layoffs-what-nokia-learned-hard-sandra-sucher/

Sustainable Development Goals. (2020). Promote inclusive and sustainable economic growth, employment and decent work for all. *The United Nations.* Retrieved from https://www.un.org/sustainabledevelopment/economic-growth/

Swift, C. (2009, Oct. 07). A recession is a good time to go green. *The National Post.* Retrieved from http://www.nationalpost.com/recession+good+time+green/2078035/story.html

U.S. Bureau of Labor Statistics. (2020, June). Civilian Unemployment Rate. *United States Department of Labor.* Retrieved from https://www.bls.gov/Charts/employment-situation/civilian-unemployment-rate.htm

The United Nations. (2020). The Ten Principles of the UN Global Compact. *The UN Global Compact.* Retrieved from https://www.unglobalcompact.org/what-is-gc/mission/principles

The United Nations. (2020, May 11). 'Urgency to act' for sustainable development, greater than ever as the coronavirus pandemic continues. *UN News.* Retrieved from https://news.un.org/en/story/2020/05/1063742

United States: Crisis, recession, and recovery: 2007-16. (2017, Jan 26). *Asia News Monitor*. Retrieved from http://libproxy.lib.unc.edu/login?url=https://search-proquest-com.libproxy.lib.unc.edu/docview/1861474767?accountid=14244

Walker, B. (2018, November). Smart Grid System Report. *U.S. Department of Energy.* Retrieved from https://www.energy.gov/sites/prod/files/2019/02/f59/Smart%20Grid%20System%20Report%20November%202018_1.pdf

Winston, A. (2009, April 03). Green in a Recession. *Industry Week.* Retrieved from https://www.industryweek.com/the-economy/environment/article/21954565/green-in-a-recession

Workplace Visions. (2009). Can Sustainability Initiatives Survive in a Tough Economy? *Society for Human Resource Management.* Retrieved from https://www.shrm.org/hr-today/trends-and-forecasting/labor-market-and-economic-data/documents/09-0131_workplace_visions_mm_final.pdf

Worland, J. (2015, July 22). How the Recession Accidentally Helped the Planet. *TIme.* Retrieved from https://time.com/3966553/recession-emissions-decline/.