



Global System Change: A Whole System Approach to Addressing COVID-19 and Achieving the SDGs

Frank Dixon

Sustainability and System Change Consultant, USA;
Associate Fellow, World Academy of Art & Science

Abstract

*COVID-19 is a tragedy and opportunity for humanity. Reductionistic thinking and resulting flawed systems put human society in conflict with nature. They are the root causes of every major challenge facing humanity. To survive and prosper, we must align our economic, political and social systems with the laws of nature. COVID-19 provides an opportunity to do so. As we emerge from isolation, new whole system strategies are needed to transform society. If we continue business as usual, nature inevitably will provide more traumatic adjustments. This article summarizes a whole system approach for aligning human systems and society with the laws of nature. It concludes with the most powerful short-term strategy for driving system change—System Change Investing. The article is based on the book *Global System Change: A Whole System Approach to Achieving Sustainability and Real Prosperity*.**

1. Executive Summary

The new coronavirus (COVID-19) is a wake up call for humanity. For millennia, many humans believed and acted as if we were in charge on Earth. Of course we are not. Nature always has been and always will be. COVID-19 is reminding us of this reality.

Over the past century, exponential growth of the human population, economy and environmental impacts created many problems. We have been walking along a cliff edge. COVID-19 sadly will cause many deaths and disrupt society for months or more. But we almost certainly will recover.

We face far greater risks, including climate change and an H5N1-type influenza pandemic. During COVID-19, utilities, food, transportation, healthcare and other essential services probably will remain largely available. During an H5N1 pandemic (60 percent lethality), billions (instead of tens of thousands) might die. Nearly all services would be shut down. Society would be devastated for years.

With COVID-19, we are getting a second chance. When the messenger knocks, if people do not listen, it knocks louder the next time. We must make sure we get the message this time.

* Supported by over 3,000 endnotes, *Global System Change* describes the systemic changes needed in all major areas of society and provides practical strategies for achieving them.

We might not get a third chance. The message is that we must align our systems and ways of life with the laws of nature, before nature aligns them for us.

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Pain is a great teacher. COVID-19 is compelling humanity to pause. It provides an opportunity to step back and see the big picture. It helps us to see that there are foundational, systemic problems that cannot be resolved through incremental, business as usual approaches. The most fundamental problem is that we are violating the laws of nature. COVID-19 shows the fragility of the human economy and society. It illustrates how quickly nature can and will compel us to comply with its laws.

COVID-19 provides an opportunity to reflect on the laws of nature and better understand how to quickly align society with them. The suffering of COVID-19 is tragic. Let us not waste it. There was extensive poverty and suffering before COVID-19. Let this crisis inspire us to improve ourselves and society.

This article explains how we can be nearly infinitely more prosperous than we are now. We control our destiny. It is whatever we choose to make it. If we continue to violate the laws of nature, suffering will grow exponentially. If we choose to align ourselves with the laws of this planet, we can reach unprecedented levels of widespread prosperity. Let us make this our destiny.

Increasing democracy and refocusing the measurement and management of society are essential for aligning humanity with the laws of nature. Under true democracy, citizens, through their servant government, focus society on maximizing long-term individual and collective well-being. But democracy does not exist in many countries. To illustrate, in the US over the past 40 years, campaign finance laws largely were dismantled and many environmental and social regulations were weakened. This lack of democracy and societal protection enabled a small group of citizens to substantially control government and concentrate public wealth.

Small business owners receive upside benefits and are required to cover downside risks. Large companies and their shareholders also receive upside benefits. But through limited liability, bailouts and other mechanisms, citizens/taxpayers cover much of the downside. Not holding companies responsible for the risks and problems they create substantially reduces the incentive to protect society. This harmful and unfair system is socialism on the downside and capitalism on the upside.

Over the past 40 years, trillions of dollars of public wealth were concentrated at the top of society through many forms of corporate welfare, while inflation-adjusted wages remained nearly flat. This concentration of wealth leaves society ill prepared to deal with COVID-19 and more severe problems.

The proposed COVID-19 stimulus program in the US reflects business control of government. Average citizens receive small payments that often do cover monthly living expenses, while companies that made large campaign contributions receive billions of dollars.

“To protect people during COVID-19, it is essential that we end one of the largest forms of corporate welfare—private sector money creation.”

Vested interests frequently criticize the idea of wealth redistribution from the top of society down to the middle and bottom. This position is highly deceptive. The solution is not to initiate downward wealth redistribution. It is to end the current massive upward redistribution of public wealth from low and middle-income citizens to the top of society.

To protect people during COVID-19, it is essential that we end one of the largest forms of corporate welfare—private sector money creation. In the US and many other countries, we allow the private sector to create and control the money supply through fractional reserve lending. This costs US taxpayers about \$500 billion per year (nearly half of federal individual income taxes).

When government runs a deficit, for example to fund COVID-19 stimulus efforts, the private sector creates money, loans it to government and citizens pay interest on it. If we the people created and controlled the money supply, we often would pay no interest. In addition, we could ensure that the public wealth was used for beneficial purposes, such as supporting people during COVID-19. Supporting average citizens is by far the most effective way to stimulate the economy and protect society. It maintains consumption and protects jobs far more than any other stimulus activity.

As discussed below, lack of democracy and inequitable resource distribution violate the laws of nature. These systems absolutely will change, probably soon. Flawed systems compel companies to operate in ways that place society at grave risk. For example, industrial food animal operations strongly promote the development of highly pathogenic viruses, such as H5N1, and facilitate their evolution into pandemic (easily transmissible) form. Improving these systems is essential for protecting society.

COVID-19 shows the vulnerability of the human economy and society to nature. Nearly all of the major challenges facing humanity are human creations. They mainly result from violating the laws of nature. They are not natural phenomena. For example, COVID-19 probably did not move directly from bats to humans. Human actions, such as live animal markets, almost certainly played a role in the pandemic. The fact that most human problems are caused by humans means we have the power to resolve them, if we develop the will to do so.

During COVID-19, many companies, financial institutions and other organizations are hunkering down. As they emerge from isolation, they often will seek new approaches. This article provides a reality-based framework for understanding and addressing major problems

and solutions. It summarizes the high-level systemic changes needed in major areas, including government, general public, media, education and corporate/financial.

A reality-based, whole system overview is essential for developing effective action plans. The UN Sustainable Development Goals (SDGs) provide many benefits to humanity. But they are based on a human-centric view of sustainability. In this sense, the SDGs are not reality-based. Humans are not the central focus of life on Earth. Nature in total is. Abiding by the laws of nature is the reality-based framework for humanity, as it is for every other species. As discussed below, it also is the most effective way to achieve the SDGs.

2. Whole System Thinking

Companies usually have a bias for action. They often want to move quickly beyond theory into action and get results. But failing to consider the big picture and moving too quickly can produce limited or counterproductive results. Experts have been researching and addressing systems theory and system change since at least the 1970s. Most system change efforts focused on one issue or area, such as community or economic reform. These efforts often produced benefits at the local level, but failed to substantially change overarching systems. Whole system approaches are the best and probably the only way to achieve the scale and pace of change required to protect humanity.

In nature, many actions combine to form effective whole system solutions. The same approach is needed to achieve sustainable society. Uncoordinated efforts that do not adequately consider the whole system, and thereby ignore relevant factors, often fail to achieve the desired results. Whole system approaches identify systemic constraints and system changes needed to abide by them. They illuminate societal interconnections, root causes, systemic barriers, key leverage points and optimal solutions. A whole system vision and strategy guide and coordinate actions in all major areas of society.

Focusing first on the endpoint and big picture is the most effective way to resolve the major challenges facing humanity. If the destination is not clear, we almost certainly will not get there. Clarifying the aspects of sustainable society illuminates the many actions needed to achieve it. Focusing first on the endpoint can seem impractical, as if present reality is being ignored. Starting from the present can produce short-term benefits and unintended consequences. This incremental, reductionistic approach to sustainability has produced many benefits over the past 40 years, but failed to reverse environmental and social degradation. Focusing first on the end point and big picture facilitates the development of the most effective short, mid and long-term sustainability and system change strategies.

Regarding the endpoint (sustainable society), humanity can be vastly more prosperous than we are now. Nature displays nearly infinite levels of sophistication, coordination, advanced technology, sustainability and widespread prosperity. We are parts of nature. As a result, we have the innate ability to achieve the same high levels. Nature implicitly operates from a whole system perspective. All aspects are balanced and taken into account. *Global System Change* provides a whole system approach for achieving our fullest potential.

Human society reflects human thinking. The root cause of every major environmental, social and economic challenge facing humanity is our reductionistic, myopic thinking. The human mind did not evolve to consider the whole Earth system and its sub-element human society at once. As result, we broke society into parts and addressed them without adequate reference to the whole system that contains them. This reductionism caused us to develop economic and other solutions that ignore relevant factors. This in turn produced unintended consequences, such as widespread environmental and social degradation.

As Einstein implied, solving our most complex challenges requires higher-level, whole system thinking. *Global System Change* uses this type of thinking to develop systemic solutions to complex environmental, social and economic challenges. *Global System Change* principles include putting the What before the How, non-judgment and practicality.

Putting the What before the How involves identifying what we want before discussing how to achieve it. It also involves stepping back and seeing the big picture or whole system, and then keeping it in mind when deciding how to address specific challenges.

Human society lives within the whole Earth system and nature. There are absolute laws of nature by which all life must abide. Humanity cannot live outside these laws for more than relatively short periods. Currently, we are grossly violating the laws of nature. We either will voluntarily align society with these laws or reality will force compliance through involuntary means, such as pandemics.

Evolving human society and our economic, political and other systems into alignment with the laws of nature can seem overwhelmingly complex. Putting the What before the How is essential for managing this complexity and making societal transformation comprehensible.

To illustrate, 200 years ago in the Southern US, many people made apparently logical and compelling arguments about why it would be difficult or impossible to end slavery. Had they looked at the whole system of nature and its inviolate laws, they would have seen that slavery inevitably would end because it grossly violates the natural law of equality. Understanding the big picture would have compelled people in the Southern US to do whatever it took to eliminate slavery, before reality ended it through highly traumatic and disruptive means.

The exact same situation exists today. Many experts, leaders and average citizens make compelling, apparently logical arguments about why it would be difficult or impossible to change economic and political systems and broader society. Stepping back and looking at the big picture shows the extent to which we are grossly violating the laws of nature and causing massive environmental and social degradation. From this perspective, it becomes clear that systemic and societal change are inevitable, probably soon given the scale and pace of degradation we are causing.

Putting the What before the How means that we first describe a human society that lives within the laws and limits of nature. Once this is clear, we can begin the conversation about how to achieve it. This principle facilitates and accelerates transformation. As people argue

that change is impossible, whole system, reality-based thinking shows the flaws of these arguments, as it would have shown the flaws of arguments against ending slavery.

To illustrate the application and importance of putting the What before the How, whole system analysis shows that our economic and political systems unintentionally put business in conflict with society and humanity in conflict with nature. These systems cause many environmental and social problems that harm and sometimes kill current and future children. Putting the What first means that we define what we want. One of the most important aspects of this is protecting our children—all children, not just our biological children. Virtually everyone would agree that we must do whatever it takes to protect children and future generations.

Once this is established, we can begin to discuss how to make necessary systemic and other changes. Vested interests might argue that it is too difficult, expensive or disruptive to change current economic and political systems. Having established the What before the How, it becomes clear that these vested interests essentially are arguing that we must continue to harm and kill children because it would be too difficult to stop doing so.

Putting the What before the How shows the unacceptability and irrationality of these arguments against system change. We established the position that we will overcome any difficulty and pay any price to protect children and future generations. Once vested interests realize that system change is inevitable, they will use their huge creative potential and resources to drive it in a cost-effective and timely manner.

Non-judgment is essential for voluntary system change. No business or political leader intends to degrade the environment or society. Failure to look at the big picture (reductionism) caused humans to develop economic and political systems that seem logical and beneficial from a narrow perspective, but produce unintended consequences. These flawed, myopic systems compel good, well-intentioned leaders to take actions that harm the environment and society.

The enemy is not these leaders. It is the flawed thinking and systems that compel their harmful behavior. Voluntary, non-disruptive system change requires engaging current leaders and the mainstream. This is greatly facilitated by non-judgment.

Practicality also is essential for voluntary systemic and societal change. It often is defined as that which can be reasonably achieved under current systems. By this standard, substantial changes to current systems frequently are considered to be impractical. This is an irrational, reality-ignoring definition of practicality.

True practicality is based on reality. Living outside the laws of nature, as we largely are doing now, might seem easy and practical. But a whole system perspective shows it to be grossly irresponsible and impractical. It inevitably will cause increasingly severe, possibly catastrophic consequences. True practicality is that which works in the real world, regardless of how difficult it might be. It recognizes that doing whatever it takes to align human society with the laws of nature is the only practical option.

Clarifying the What (living within the laws of nature) facilitates the development of practical strategies for achieving it. Big picture practicality illuminates the upside. It shows that humanity can be nearly infinitely more prosperous than we are now. The benefits of sustainability and system change (survival, true prosperity) vastly outweigh whatever costs or difficulties might be involved in achieving it.

The *Global System Change* process involves clarifying the major aspects of sustainable society, systemic changes needed to achieve it, and actions required in different areas to bring about these changes. This article summarizes these three areas and concludes with a fourth—the most powerful short-term driver of system change—engaging the corporate and financial sectors through System Change Investing.

3. Sustainable Society

Nature operates according to physical and nonphysical laws. It does not care about human ideas, philosophies or systems. Humans are the only creatures that care about human ideas. Nature will operate according to its inviolate laws regardless of what humans think, say or do. Our only options are alignment with the laws of nature or adjustment. If we attempt to perpetuate our reductionistic ideas and systems, they will be adjusted, probably soon.

To the extent that human perceptions of reality differ from reality (the laws of nature), reality and nature will correct them. Before discussing any philosophy or strategy for society, we must understand the constraints within which humanity exists. This provides the reality-based framework for evolving human society into a form that abides by the laws of nature. This in turn enables us to truly prosper over the very long term and achieve our fullest potential, individually and collectively.

The laws of nature can be deduced through objective, whole system observations of nature and natural systems. Natural laws are qualities that are essential for system survival and prosperity. Healthy, stable natural systems ultimately cannot exist without them. Imbalances (violations of the laws of nature) only can exist for relatively short periods. Nature and reality correct imbalances to ensure long-term survival and prosperity. (Natural law in this article refers to the actual, observed laws of nature. It does not refer to religious dogma, which sometimes is deceptively labeled natural law.)

Physical laws of nature include cooperation, seeking balance not growth, equitable resource distribution, equally valuing current and future generations, equally valuing species, living on renewable resources, producing no waste, maintaining clean and stable life support systems, enabling individuals to reach their fullest potential, and decentralizing production and governance (except in limited cases where broader or global governance is most effective). The nonphysical laws of nature include equality, self-government and freedom of expression.

All life forms, except humans, abide by these laws through DNA, instinct, intuition and other mechanisms that we do not fully understand. The implied coordinating mechanism, intelligence or wisdom of nature produces nearly infinite coordination, symmetry and

technological sophistication. We sometimes make the mistake of thinking that we are the most intelligent creatures on Earth. But judging by results, the objectively most important standard in reality, we are near the least intelligent. This recognition promotes humility, which in turn opens our minds to new ways of thinking and being on this planet.

The natural laws of equitable resource distribution and cooperation can be used to illustrate myopic, unintentionally destructive current thinking and higher-level, reality-based, whole system thinking. Many people probably would say that inequitable resource distribution is a natural state among humanity because it has existed in different forms since the First Agricultural Revolution about 12,000 years ago. This reflects myopic thinking.

In nature, creatures take only what they need. One animal does not take 1,000 times more than it requires, thereby causing other animals to go hungry. In the human body, cells also only take what they need. As a result, resources are equitably distributed throughout the body, as occurs in all other healthy natural systems. If the inequality in human society existed in the human body, people would quickly die. Modern humans have existed for about 200,000 years. For nearly all of this time, resources were distributed about equally among people in hunter-gatherer societies. Over the past 12,000 years, no society with significant resource inequality survived for more than relatively short periods.

To modern humans, inequitable resource distribution might seem like a natural condition of humanity or a fact of life. But it is the opposite. It grossly violates the natural, inviolate law of equitable resource distribution. As a result, any society or human system with significant inequality inevitably will end or change. Equitable resource distribution is not a utopian philosophy. It is an inviolate law of nature. This clarity helps to overcome barriers to system change.

As vested interests argue that ending resource inequality would be difficult or impossible, whole system thinking shows that it not only is possible. It absolutely will occur in human society, as it already occurs in nature and our own bodies. Equitable resource distribution will be achieved through voluntary or involuntary means, possibly including the great reduction or elimination of humanity. Throughout history, all human systems that violated the laws of nature changed, usually by collapsing. If we do not voluntarily implement equitable economic, political and social systems, nature and reality will impose them on us in a highly traumatic manner. Understanding this will help us to do whatever it takes to make it happen, rather than fight to maintain current inequitable systems.

Many people also would say that competition is a natural state in human society and nature. This once again reflects myopic thinking. One might observe an animal eating another and conclude that nature is competitive. Limited competition occurs at the individual level. But stepping back and observing the whole system shows that the overwhelming force in nature and healthy natural systems is cooperation. When the overwhelming force is competition, as in a body with terminal cancer, the system is out of balance or dying.

We are all interconnected parts of one system, like cells in the body. None of us can survive in outer space. Each human is as much a part of the whole Earth system as the hand is of the body. Myopic thinking and our five senses often trick us into thinking that we are

separate from each other and nature, as they once tricked us into thinking that the Earth was flat. Thinking that we are separate produces fear and belief in the need to compete for scarce resources. This myopic thinking has driven extensive, inefficient, destructive competition over the past 12,000 years.

Greater cooperation within human society also is not a utopian ideal or philosophy. Cooperation is an inviolate law of nature. The only way that humanity can survive and truly prosper over the long term is to greatly increase cooperation in society, achieving nearly the same overwhelming levels that already exist in nature and our own bodies.

The absolute, inviolate laws of nature are constraints for human society. But they also are liberating. Abiding by them is the pathway to unprecedented, long-term prosperity and happiness among humanity.

It also is the most efficient and effective way to achieve the SDGs. As noted, the goals provide a human-centric view of sustainability. But the reality-based view is nature-centric. Abiding by the laws of nature will substantially achieve the SDGs. For example, abiding by the natural law of equitable resource distribution will largely achieve the SDGs related to poverty, hunger, healthcare, education, gender equality, energy, water, sanitation, economic opportunity, good jobs, safety and justice.

4. Necessary System Changes

Aligning human society with the laws of nature requires many system changes in all major areas. These changes can be framed up with three *Global System Change* principles—emulate nature, establish democracy and abide by the rule of law.

Emulating nature is essential for achieving long-term survival and prosperity. We are surrounded by nearly infinitely greater implied intelligence and wisdom. As part of nature, we have access to this intelligence, largely through the intuitive. But current education systems generally do not adequately teach people how to access it.

Nature provides a nearly perfect model for sustainable human economic, political and social systems. Imagining how we could abide by the laws of nature enables us to envision a sustainable society. This illuminates the flaws of current systems and necessary system changes.

To illustrate, nature implicitly values current and future generations equally because it provides about equal resources to them. Time value of money violates natural law by saying that future generations are worth less than current ones. Obviously this must be changed.

In nature, there are no externalities. All aspects implicitly are balanced and taken into account. But we allow businesses to externalize vast costs onto society. As nature implicitly does, we must use full cost, whole system accounting to take all relevant tangible and intangible factors into account.

Nature implicitly seeks balance and resilience. We myopically seek infinite growth in a finite system. Nature implicitly seeks to maximize individual and collective well-being. Our

financial and economic systems seek to maximize the financial well-being of shareholders, and irrationally assume that this will maximize the well-being of all stakeholders.

Nature produces no waste. But our grossly inefficient production and other processes produce massive amounts of waste. We churn through pristine nature and turn much of it into garbage. Nature equitably distributes resources. But our unjust, undemocratic systems concentrate massive amounts of wealth at the top of society.

Democracy is another essential aspect of sustainable society. It is an implied law of nature. In nature, individuals are free to do what they want and reach their fullest potential. Democracy in principle is the only sustainable form of government. It is based on innate rights of equality and self-government. However in practice, as the US Founders well knew, democracy is an unworkable form of government for more than small groups. Citizens usually do not have enough time to study and make well-informed decisions about all issues. Therefore, democracy must be implemented through republican forms of government. Under this approach, expert politicians make well-informed decisions that maximize the long-term well-being of society. Obviously this requires that politicians equally serve those who elect them.

High inequality indicates low democracy. Countries with low poverty and high standards of living, like Scandinavian countries, implicitly have strong democratic governments that use the public wealth to equally and fairly benefit all citizens. Countries with high inequality, like the US and China, implicitly have low democracy. Citizens vote in these countries. But it has limited impacts on government. Both countries largely are controlled by small groups of powerful people—wealthy campaign donors in the US and the Communist Party in China.

As noted, over the past 40 years, the US substantially dismantled its campaign finance laws. As a result, wealthy citizens are allowed to anonymously spend unlimited amounts of money on election campaigns. Several studies have shown that politicians from both major political parties focus almost completely on meeting the needs and requests of wealthy campaign donors. As a result, wealth has been concentrated at the top of society for the past 40 years through many forms of corporate welfare. At the same time, inflation-adjusted wages have been nearly flat.

About 43 percent of US citizens cannot afford to meet basic needs. The US uses a deceptive 1960s era definition of poverty that actually measures extreme poverty, not poverty in general. A more honest and accurate definition is inability to meet basic needs. By this standard, nearly half the people in this supposedly prosperous country are living in poverty. Obviously this injustice will not last. It violates natural law. Voluntarily abiding by the natural law of equitable resource distribution requires true democracy implemented through republican government.

One of the most important democracy related systemic changes involves the money supply. Money can be created by the private or public sector. With private money creation, banks create money, loan it to government and citizens pay interest on it. With public money creation, government creates money, loans it to banks, and citizens earn interest.

Creating money can generate substantial income. In a democracy, this revenue belongs to the people, not banks. But We the People have given away our right to create, control and profit from the money supply. This nearly doubles federal individual income taxes and severely restricts our ability to maximize the long-term well-being of society. Private sector money creation costs US citizens about \$500 billion per year (interest on the national debt – \$400 billion; lost interest income – over \$100 billion).

As discussed in *Global System Change*, switching from private sector to public sector money creation is fairly simple. In the US, it involves making the privately owned and controlled Federal Reserve part of the US Treasury and requiring 100 percent bank reserves (i.e. ending fractional reserve lending). Under current systems, banks only are required to hold a small percentage of deposits. When they loan out the remainder, they create new money (in the form of debt).

To illustrate, if someone deposits \$1,000, at a ten percent reserve requirement, a bank can loan out \$900. This creates \$900 of new money. When that is deposited, the bank can loan out \$810. Under this approach, the banking system can grow a \$1,000 deposit to \$10,000, and thereby create \$9,000 of new money out of thin air. About 90 percent of the US money supply is created this way. Much of the interest on this newly created money belongs to citizens. But we allow banks to keep all of it.

With public sector money creation, banks are required to hold 100 percent of demand deposits. Instead of allowing banks to create money through fractional reserve lending, We the People create money and loan it to banks at a low interest rate. This interest income is used to lower taxes and fund socially beneficial activities. Banks loan out government-created money at a higher rate and profit from the spread.

The benefits of transitioning from private to public money creation are overwhelming. It will substantially reduce taxes and improve society as the money supply is used for beneficial purposes, instead of maximizing the wealth of bank owners. It will vastly simplify management of the money supply as one entity (democratic government) creates money, instead of thousands of financial institutions. It also will increase credit availability and produce a far more stable money supply, especially during recessions, because money will not be constantly appearing and disappearing as loans are made and repaid. In addition, reclaiming our constitutional right to create and control the money supply will substantially reduce or eliminate the national debt and deficit spending.

The rule of law is one of the most effective ways to frame up and simplify system change, especially in the corporate and financial sectors. Nearly all economic and political system flaws could be rolled up into one overarching system flaw—the failure to hold companies fully responsible for negative environmental and social impacts. This is the general mechanism that puts businesses in conflict with society. In competitive markets, not holding companies fully responsible makes it impossible for them to act in a fully responsible manner (by eliminating all negative impacts) and remain in business.

Very generally speaking, companies can voluntarily eliminate about 20 percent of short-term and long-term, tangible and intangible, negative environmental and social impacts in a profit-neutral or profit-enhancing manner. Beyond this point, costs usually go up. If companies continue impact reduction, they will put themselves out of business long before reaching full impact mitigation.

Many specific economic and political systems flaws fail to hold companies fully responsible. These include limited liability, time value of money, externalities, over-emphasizing economic growth and shareholder returns, inadequate measurement of social well-being, and inappropriate business influence of government.

Not holding companies responsible violates the rule of law. This principle says that individuals and companies should be free to do what they want, provided that they do not harm others. Current systems not only allow, but compel companies to cause massive environmental and social harm. People in the future will look back on our gross rule of law violations in the same way that we look back on slavery and witch burning. But like those in the time of slavery, it often is difficult for people today to see the extremely destructive nature of systems that they depend on and have lived their whole lives under.

The rule of law is a good system change framing device because it boils virtually all economic and political system flaws down to one simple, easily understood, non-debatable (within the realm of logic) overarching system change. Businesses and their allies cannot credibly argue that they should be allowed to violate the rule of law (i.e. harm the environment and society). And yet they violate it extensively. This contradiction cannot withstand enlightened public scrutiny.

Vested interests often attempt to perpetuate profits and destructive systems by misleading citizens into opposing regulations. This deception distracts them from the most important issue—not causing harm. Opposing business regulation is worse than opposing murder, assault and robbery laws. Individuals can and usually would voluntarily act responsibly if these laws were removed. But businesses cannot act in a fully responsible manner and remain in business. As a result, business regulations are essential. Holding companies fully responsible makes acting in a fully responsible manner the profit-maximizing strategy.

Vested interest-controlled governments frequently implement inefficient regulations that, for example, make it difficult for small companies to compete with larger companies that gave more money to politicians through campaign finance (legalized bribery). The solution to inefficient regulations is not to generally eliminate them, as vested interests often imply. The priority is figuring out how to hold companies fully responsible (i.e. fully apply the rule of law) in the most efficient and effective manner possible.

COVID-19 illustrates one of the most important rule of law violations. It is unclear what role industrial food animal operations played in the COVID-19 pandemic, if any. However, as discussed in *Global System Change*, these operations severely threaten humanity. H5N1, for example, almost certainly evolved in industrial chicken operations in China. These operations in the US, China and many other countries intensively confine immuno-compromised,

unnaturally-bred animals in their own waste, in high stress environments with little access to sunlight and fresh air. This creates a nearly perfect environment for the evolution of highly pathogenic viruses. Frequent human contact with industrial animal facilities creates many opportunities for high path viruses to jump to humans and evolve into pandemic form.

Industrial animal operations place humanity at great risk of a pandemic that in orders of magnitude worse than COVID-19. Under sustainable, rule of law-based economic and political systems, companies would be held fully responsible for the burdens and risks they impose on society. This would make harmful or risky activities, like concentrated animal production, too expensive. It would compel companies to produce food and other products in a safe and responsible manner.

Sustainable Development Goals. System change is the most important action needed to achieve the SDGs. Flawed systems compel all companies to cause environmental, social and economic problems. These systems, and the reductionistic thinking that created them, are the root causes of the major challenges addressed by the goals. Nearly all SDG efforts are focused on symptoms (environmental, social, economic problems), instead of root causes (flawed systems that create the need for the goals in the first place).

System change is a highly efficient and effective way to achieve the SDGs. Rather than focusing on the 17 goals and 169 targets, one system change strategy (*Global System Change*) can substantially achieve the goals. Many voluntary SDG-specific efforts would become unnecessary under rule of law-based economic and political systems. Companies automatically would minimize or eliminate negative impacts because this would be the profit-maximizing approach.

5. Societal Actions

Many actions are needed in all areas of society to achieve the systemic changes summarized above. Whole system approaches are essential for framing up, coordinating and guiding societal actions. Reality (the laws of nature) is the foundational framework for guiding human society and sustainability strategies at all levels. This framework can be used to coordinate the following actions, minimize unintended consequences and maximize the likelihood of goal attainment (sustainable society). Major action areas include government, the general public and corporate/financial.

Government. Extensive government changes are needed to align human society with the laws of nature. Government largely (and necessarily) controls the economic and financial systems. For example, efficient, beneficial markets cannot exist without rules that protect buyers and sellers. Only government can enforce the rule of law, require responsible business behavior, and thereby make acting responsibly the profit-maximizing strategy. Only government can implement the many specific system changes needed to enforce the rule of law, such as reforming limited liability, time value of money and externalities.

Government largely controls the flow of funds in society. Only government can ensure that the public wealth is used to equally and fairly benefit all citizens, for example, by

reforming tax and other corporate welfare programs (i.e. abide by the natural law of equitable resource distribution). Government also largely controls the measurement, management and focus of society's success. Only government can shift the focus from economic growth and shareholder returns to maximizing the long-term well-being of society.

Government also substantially influences the levels of economic and governance centralization and decentralization. Government can strongly drive decentralization, for example, by implementing programs that strengthen communities and local economies. This facilitates abiding by the natural law of decentralized production and governance.

Only truly democratic governments can make the above changes. In a democracy, government is the agent of the people. Its job, as the US Founders intended, is to equally and fairly serve all current and future citizens in an efficient and effective manner. James Madison said that the people are the only legitimate source of power in government. The people exercise their collective power to maximize their individual and collective well-being through governments that they control (democracy).

But democracy does not exist in the US, China and many other countries. The US is a plutocracy (control of government and society by the wealthy), not a democracy. The US government has done an excellent job over the past 40 years of effectively serving those who control it, as shown by rapidly rising wealth and income inequality.

Vested interest-controlled governments are unlikely to change on their own, unless there is a major collapse. But then it will be too late to avoid widespread suffering and disruption. Pressure to make the essential changes noted above largely will come from outside government, mainly from the general public and corporate and financial sectors.

General Public. The people collectively are the most powerful force in society. They could quickly change any business or government, if they understood and acted upon their many common interests. Unfortunately, as the US Founders well knew, citizens are vulnerable to deception and disempowerment. The Founders often spoke of the evils of democracy. They knew it was the only sustainable form of government, but it has this major weakness.

The primary means of deceiving and disempowering the people is to take advantage of tribalistic tendencies and divide them into debating factions. The main Founders, except Hamilton, were greatly alarmed by the establishment of political parties. They did not want the newly united states to be divided into debating factions. They knew that vested interests could use political parties to divide and disempower the people. This enables them to take control of government and unfairly concentrate public wealth. For nearly all of US history, political parties have enabled vested interests to largely control government.

Political parties divide the people into acrimonious, often hateful factions, such as conservatives and liberals. Citizens agree on nearly all major issues. Nearly everyone wants a strong economy, good jobs, low crime, good education and healthcare, a clean environment, good international relations, and efficient, effective government. Some people argue that citizens agree on higher goals, but not on the means to achieve them. But if people set aside philosophies and other subjective or myopic thinking, and instead look at the big picture and

objectively consider options for achieving goals, they would realize that they also largely agree on how to achieve them.

The path to widespread prosperity is clearly defined in nature. Nature does an excellent job of maximizing individual and collective well-being, far better than we are doing. If the people had full, accurate information, they would understand their collective best interests and work together to achieve them. But political parties divide the people and make them unable to work together.

“COVID-19 is compelling government to do its constitutional duty of protecting the general public. This shows how quickly government can act when necessary.”

The conservative-liberal war is the most destructive influence in the US and many other countries. Vested interests use political parties and dishonest media to turn the people against each other. As citizens are busy fighting false enemies (each other), vested interests are free to essentially steal the people’s wealth and power to rule themselves.

It will be impossible to establish democracy and sustainable society unless we end the many conservative-liberal civil wars that are raging around the world. Uniting and empowering the people is one of the most important actions needed to abide by the laws of nature and protect the common long-term well-being of humanity.

Many specific actions are needed to achieve this. These include weakening political parties, requiring honest media, raising public awareness about root causes and optimal solutions, and implementing empowering, freedom-based education.

Political parties are not mentioned in the US constitution. Politicians are supposed to equally and fairly serve those who elect them. But political parties often sit above politicians and compel party-line voting. Political parties largely are controlled by wealthy campaign donors, not citizens in the party. As a result, regardless of which party wins, the wealthy benefit, while average citizens usually suffer. Every party-line vote violates the Constitution because the people are not controlling government. Political parties must be weakened so that citizens can directly and equally control the politicians they elect.

Honest media is essential for democracy. The people cannot effectively rule themselves if they do not have honest, accurate information. From 1949 to 1987, the Fairness Doctrine required large US media organizations to provide both sides of controversial issues. But this requirement for honesty inhibited the ability of vested interests to mislead, divide and disempower citizens. As a result, vested interest-controlled government removed it. Now media essentially is allowed to lie to or mislead the public.

For example, conservative media often promotes the views of energy company-funded scientists who say that humans are not causing climate change. They are not required to disclose that the vast majority of climate scientists say we are substantially contributing to

climate change and urgent action is needed to protect humanity. This misleads conservative citizens into taking actions that protect shareholder returns, but harm their children and themselves.

To maximize the long-term well-being of humanity, citizens must be made aware of the root causes of major challenges (reductionistic thinking and resulting flawed systems) and optimal solutions (system change implemented through whole system approaches). To achieve this, the people must demand honest media. US citizens have a constitutional right to freedom of speech. This does not give media the right to lie or mislead the public. Citizens' need for honest, accurate information takes huge priority over media's (nonexistent) right to say whatever it wants (lie).

To illustrate the power of the people when we act collectively, democratic government is a servant. Inappropriate business influence makes the US government a servant of large companies and their wealthy owners, as shown by the vast concentration of public wealth over the past 40 years. The people allow this theft of their wealth and power to rule themselves because they have been deceived, divided and disempowered.

Under the COVID-19 crisis, government quickly reasserted its power. COVID-19 is compelling government to do its constitutional duty of protecting the general public. This shows how quickly government can act when necessary. The ability to act quickly is important because substantial government action is needed to transform and protect society.

When businesses largely control government, they essentially are regulating themselves. This situation is like the children in the *Lord of the Flies*. They destroy themselves because they are unregulated. Good parents constrain their children, who then grow up to be the most successful adults. In the same way, businesses also must be constrained and compelled to abide by the rule of law (not harm the environment and society). This makes acting responsibly the profit-maximizing strategy and produces the most successful, socially-beneficial companies.

The only way this can occur is if We the People stop fighting each other and begin to work together on our many common interests. When united, we can take charge of government and compel it to serve us (i.e. do its constitutional duty), instead of primarily serving wealthy campaign donors.

Freedom-Based Education also is essential for empowering citizens to rule themselves and protect their common interests. The current forced education system is a legacy of the Protestant Reformation and Industrial Revolution. The goals largely are indoctrination and obedience training. Young people are forced to sit in sterile classrooms for about 35 hours per week listening to adults talk to them. They are constantly ranked against each other and made to feel inadequate if they fail to achieve superior grades. They are forced to study subjects in which they often have no interest and quickly forget. Students are constantly monitored and controlled by authorities. They are taught to blindly believe dominant societal ideas. Young people frequently learn that fun occurs outside of school.

This coercive, compulsive education system teaches young people to obey authorities and endure boring jobs for the rest of their lives. It creates a cowering, compliant population

that can be abused by vested interests and will not question unjust economic and political systems. Education reflects society. Our society is focused on maximizing economic growth and shareholder returns. It is no surprise that young people are trained to serve this end, even if it does not meet their needs.

Freedom-based education approaches, such as Self-Directed Learning, have proven themselves over decades in the US and other countries. The approaches do a vastly better job than forced education of developing the most important skills needed for life success, including high self-esteem, strong social and emotional skills, independent thinking, and empowerment to guide one's own life. Young people are not ranked against each other or forced to study subjects in which they have no interest. Compared to forced education, they perform as well or better in higher education and careers.

Humans did not evolve to learn by force. Coercion causes poor knowledge retention and weak social skills. People often spend the rest of their lives trying to prove that they are not as stupid as they were made to feel in school. As we shift society from plutocracy to democracy, we will implement truly empowering education. Freedom-based education maximizes the well-being of society by best preparing young people to have fulfilling and successful lives.

6. System Change Investing

Extensive actions are needed in the corporate/financial area to abide by the laws of nature and achieve sustainable society. When the people are divided and disempowered, the corporate and financial sectors often are the most powerful forces in society. They strongly control governments in the US and many other countries. Companies and large investors usually use this influence to block system changes that threaten short-term profits and investment returns.

But these efforts to perpetuate unintentionally destructive systems are increasingly counterproductive. Flawed systems compel all companies to degrade the environment and society. As the human population and economy expand in the finite Earth system, negative corporate impacts return more quickly to harm companies, often in the form of market rejection, lawsuits and reputation damage. Companies have increasingly strong financial incentives to change the systems that cause growing problems for business and society.

Investing is the most powerful short-term mechanism for driving system change. The corporate and financial sectors largely are controlled by investors. Over the past 20 years, the global Sustainable/Responsible Investing (SRI) market has grown to over \$30 trillion. SRI compelled nearly all large companies to implement sustainability strategies. The same mechanism can be used to encourage companies to implement collaborative system change strategies.

System Change Investing (SCI) provides a practical and profitable way to do this. Like SRI, the process involves developing strong business cases for system change, rating companies on system change performance, and developing system change-based investment funds. The business case for system change is strong and clear. If we do not adequately address the root

causes (flawed systems) of major environmental, social and economic problems, they will cause increasingly severe consequences for business and society.

“Developing effective system change rating models requires first understanding the main characteristics of sustainable society and the major system changes needed to achieve it.”

Current systems often make it impossible for companies to earn profits without degrading the environment and society. Sophisticated investors and business leaders understand that this situation is increasingly untenable. Environmental and social degradation is widespread and accelerating. We do not have decades to avoid major societal disruptions. COVID-19 shows how quickly the human economy and society can be shut down. Substantial system change is needed in the short-term. Corporations, institutional investors and other large corporate/financial sector parties have great power to promote it. SCI is the most effective way to engage these sectors in driving system change.

Substantial financial, sustainability and reputational benefits are a main component of the SCI business case. SCI ratings identify systemic risks and opportunities and provide strong indicators of management quality and stock market potential. They can be used as overlays to enhance the financial returns of value, growth, index and many other types of investment funds.

System change is the most important sustainability issue. As a result, SCI funds can provide greater sustainability benefits than any other SRI fund type. Financial institutions launching SCI funds will be seen as the new sustainability and SRI leaders.

Rating corporate system change performance is more complex than traditional ESG (environmental, social, governance) analysis. The frame of reference is much larger. ESG research mainly assesses unilateral corporate efforts to reduce negative impacts, for example, by lowering pollution and selling low impact products. The frame of reference for corporate system change analysis ultimately is the whole Earth system and its sub-element human society. This larger context must be understood before accurate corporate system change rating can be done.

Developing effective system change rating models requires first understanding the main characteristics of sustainable society and the major system changes needed to achieve it. Once this is clear, the optimal corporate role in bringing about these changes can be identified. Aspects of this role become metrics in system change rating models.

The first SCI model (Total Corporate Responsibility – TCR[®]) was developed in 2003. The model is segregated into three broad metric categories—traditional ESG, mid-level system change (sector, stakeholder, environmental/social issue-level) and high-level system change (economic, political, social system-level). Examples of SCI metrics include system change strategy, public awareness and media campaigns, system change collaboration, government

influence activities, addressing specific system flaws, and supporting NGOs, academia and other groups that promote system change.

Nearly the entire SRI market is focused on changing companies and addressing symptoms (environmental, social, economic problems). SCI shifts the focus to system change and root causes. It is the most significant SRI transformation since positive screening was introduced in the 1990s. SCI is a new paradigm, whole system approach. It represents the higher-level thinking and action needed to resolve major challenges and align humanity with the laws of nature.

SRI rating models provided sustainability roadmaps. They showed which sustainability actions were important to corporate owner/investors. In the same way, SCI models provide system change roadmaps for companies. They illuminate the many actions needed to implement the most advanced corporate system change strategies. Corporate sustainability is mainstream. SCI creates a large opportunity for sustainability advisers. As investors shift investments based on corporate system change performance, many companies will seek guidance on how to expand their sustainability strategies to include system change.

It often is difficult to look forward and imagine a sustainable society that abides by the laws of nature, in the same way that it was difficult for people in the Southern US 200 years ago to imagine a society without slavery. From our current perspective, equitable resource distribution and widespread cooperation among humanity can seem idealistic and unattainable. A whole system perspective shows that these factors are inviolate laws of nature and absolute requirements for long-term human survival and prosperity.

Putting the What before the How helps to overcome resistance to system change. It facilitates doing whatever is necessary to abide by the laws of nature. It shows that the cost and difficulty of voluntary system change is nothing compared to that of involuntary system change.

COVID-19 will be one of the most disruptive events in modern history. But it will not shut us down. It is a wake-up call. Let it motivate us to change our systems and ways of life before nature changes them for us. A whole system perspective shows that we have the innate ability to be nearly infinitely more prosperous and successful than we are now. Pain is a great teacher. Let the pain of COVID-19 teach and help us to reach our fullest potential.

Author Contact Information

Email: fdixon@globalsystemchange.com