

A 21st Century Economics for the People of a Living Earth

*Our most prestigious universities continue to teach economics principles
now known to be driving humanity to self-extinction.*

*An economics for the 21st century will guide us from an economy
that empowers corporations in the service of money
to an economy that empowers people in the service of life.*

Voices from every quarter—from student activists to the Vatican—are calling for an economy that serves the well-being of people and Earth. Workers and their unions join in with the wrenching observation that “There are no good jobs on a dead planet.” Pope Francis condemns an economy devoted to the “[idolatry of money.](#)”

A global alliance of citizen movements has banded together under the banner of [WEALL](#) to work for an economy devoted to the well-being of people and planet. New Zealand has announced a new budget that puts the focus on growing well-being rather than growing GDP.

A youth-led political movement in the United States calls for a Green New Deal. Rethinking Economics, a global student movement demands reform of economics seminars that rarely mention poverty, climate change, or inequality. The Club of Rome, a global alliance of new-paradigm thought leaders, has launched initiatives on the climate crisis, a new civilization, and reclaiming economics.

These calls are born of a spreading awareness of the institutional failure that drives humanity toward self-extinction as more and more people compete for less and less in a world in which power and wealth are increasingly concentrated. As we confront the challenge of survival, it becomes apparent that the choices we must make to survive are the same choices required to achieve a long-denied human dream of a world of peace, material sufficiency, and spiritual abundance for all.

That awareness in turn gives birth to a recognition that there is nothing inevitable about the institutions that now so badly fail us. They are the product of choices made over decades, centuries, and even millennia by our ancestors. We now have the means to make different choices through conscious collective processes with a speed that previous generations could not have imagined.

We now face a fundamental question. Are we humans primarily financial beings whose well-being depends on growing money? Or are we living beings whose well-being depends on the health and vitality of a living Earth? The answer should be obvious, as is the reality that we are in trouble because we have created a global society based on a false assumption.

Achieving the desired and possible future for people and planet will require a deep transformation of culture, institutions, technology, and infrastructure guided to embody the foundational intellectual insights and moral principles of indigenous peoples, the

Earth Charter, the papal encyclical *Laudato Si'*, and the Parliament of the World's Religions' Declaration on Climate Change. This in turn requires that we prepare a new generation of leaders with the tools to navigate that transition. And that will require a serious update of what we currently teach as economic science in our schools and universities.

With few exceptions, economics, as it is currently taught, is grounded in the same badly flawed theories and principles that bear major responsibility for the unfolding crisis. Those theories and principles value life only for its market price; use GDP growth as the defining measure of economic performance; assure us that maximizing personal financial return benefits society; recommend policies that prioritize corporate profits over human and planetary well-being; and ignore the natural limits of a finite Earth. A significant update of economics to align with reality, authentic values, and environmental imperatives of our time is urgent and seriously overdue.

The Imperative

By the estimates of the Global Footprint Network, the human species currently consumes at a rate 1.7 times what Earth's regenerative systems can sustain. Any level of consumption over 1.0 means we are destroying Earth's capacity to sustain life—thus putting the human future in peril. Our existence and well-being depend on the systems by which Earth maintains the health of the soils that produce the foods we eat, the waters we drink, the air we breathe, and the stability of the climate that shapes the daily life of every living being.

As the environmental crisis unfolds, financial wealth and political power become ever more concentrated in the hands of fewer and fewer people. Six humans now hold personal financial assets greater than those of the poorest half of humanity. That is 6 individual humans vs. 3.9 *billion*. In consequence, billions of people face a desperate struggle to meet their daily needs for food, water, and shelter while a few lavishly indulge themselves beyond the dreams of history's kings and emperors.

Meanwhile, environmental and social breakdown render ever more of Earth's places uninhabitable and drive growing millions of desperate people to abandon their homes in search of refuge in the world's remaining livable places. The United States—a desired destination for many—has its own livability problems. For one, with more billionaires than any other nation, its richest 1 percent own substantially more wealth than the bottom 90% and 4 out of 10 U.S. adults don't have enough spare money to cover a \$400 emergency.

The stark contrast between the promise of economic progress and the reality of growing hardship on a dying Earth explains the failing legitimacy of humanity's most powerful institutions and the widespread appeal of political demagogues to a disillusioned public.

The Failure of Mainstream Economics

The economic theory known as neoliberalism that became the global standard in the mid-20th century had a major role in guiding humanity into its current existential crisis. That same theory, which continues to be the standard in most all the world's universities, now poses a major barrier to navigating a global course change.

Economics lost its way as an intellectual discipline in the mid-19th century when a group of influential economists sought to raise the field to a stature comparable to physics. To that end, they borrowed a mathematical model from physics as the foundation of future economic theorizing and chose money as a readily available metric. By the mid-20th century, economics had made GDP growth the defining measure of economic performance and making money the economy's defining purpose.

Unfortunately for people and Earth, those economic theories are based on assumptions that contradict reality. They assume a world in which money is wealth and a storehouse of value, making money creates wealth, and there are no limits to growth in consumption. Based

I don't care who writes the nation's laws, if I can write its economic textbooks.
—Paul Samuelson, whose economics textbook was the standard through the latter half of the 20th century.

on the assumptions of this imagined world, generations of business and governmental leaders have been taught to believe that financial assets can and will grow perpetually and if we each focus on maximizing personal financial returns, markets will assure that everyone will eventually get richer and all will benefit.

To this end, public policy supports an economy devoted to maximizing private returns to private financial assets. The result is a system prone to collapse if financial returns do not grow perpetually.

In the real world, money is just a number. Growing it only creates a larger number. Storing a growing number does nothing to assure that tomorrow's air will be breathable, its soils will be fertile, or its climate will be stable. Earth is finite, as are the regenerative systems on which its well-being and ours depend. Markets can provide only what is available for sale. Profits serve only those to whom they flow.

Focused on money rather than well-being, 20th century economics also assumes that value is determined by market price. This introduces myriad distortions. We cannot live without air for more than a few minutes. We could easily live our whole life without gold. But gold is expensive, and air is free. Which is more valuable?

We easily monetize some essentials such as food and water. Love, beauty, self-worth, and meaning are beyond price. Their value increases when shared. Their value is diminished or even destroyed when monetized, marketized, and monopolized.

Physically, we can go much longer without love than without food and water. Yet we might sacrifice our own life to feed a loved one who otherwise might starve. The new

economics we need to address the realities of the 21st century will recognize that market price tells us only what the current market values. It tells us nothing about what is most valuable and essential to secure the well-being of people and planet.

While such complexities are of little interest in a 20th century economics concerned only with money and markets, they will be foundational concerns of a 21st century economics dedicated to reducing humanity's environmental burden by eliminating harmful consumption—for example war—while simultaneously increasing well-being.

Some 50 years of public policymaking based on assumptions deeply divergent from reality has served well the interests of aspiring billionaires. For people and planet, it has been a collective act of suicidal insanity.

Public rules and monies that might otherwise have supported schools, health care, clean water, clean energy, soil restoration, natural carbon sequestration, green infrastructure, and much more have been directed instead to protecting and subsidizing corporate profits. The latter was recently highlighted in the United States by the [multi-billion dollar bidding war](#) among U.S. cities for the second headquarters of Amazon, a now global corporation controlled by the world's richest individual and on a path to global control of the production and marketing of everything.

Corporate media keep public attention focused on GDP as the defining measure of human well-being. Corporate interests make selective use of statistics to assure the public that as GDP grows, life everywhere is getting better for everyone willing to work.

Meanwhile the real outcome of GDP growth is the devastation of nature and a concentration of wealth and power that violates the most foundational principles of justice, democracy, markets, and a healthy Earth. The obscenely rich temporarily enjoy opulence and the desperately poor struggle to survive on a declining share of the remaining regenerative capacity of a dying Earth. There are no winners on a dead planet.

An economics grounded in intellectual and moral fallacies does not, cannot, serve people facing the realities of 21st century life on a finite Earth. Daily reports of record-setting floods, fires, melting icecaps, violent storms, and massive displacements of people makes it ever more difficult to hide the reality of the crisis. Worse than useless, the misrepresentations of 20th century economics are an active barrier to progress.

Deep change guided by an economics grounded in an authentic story is imperative. The journey ahead begins with a recognition that *humans are a species born of and nurtured by a living Earth*. That is a foundational premise of 21st century economists, such as Peter Brown, Jon Ericksen, Joshua Farley, and Kate Raworth, who are framing a 21st century economics that begins with recognition that Earth's care must be a foundational human priority.

The Miracle of Life and Humanity's Unrealized Potential

As the pioneering biologist Lynn Margulis once observed, “Life is matter with the power to choose.” It is an observation at once simple, self-evident, profound, and long denied by the mainstreams of Western science and economics.

Matter possessed of agency—the power to choose—is a living organism. Matter without agency is just dead matter. Among all known organisms, we humans have a capacity for agency—for self-determination—far beyond that of any other species known to us. It includes our capacity to choose our nature and future as a species—and even to shape the future of Earth. Yet we take it all for granted and forget the distinctive responsibilities that come with this power.

The range of human possibility is truly extraordinary. We have irrefutable evidence of the human capacity for ruthless deceit and violence. Far too great a percentage of those who rise to high positions of power exhibit such tendencies. Far from being the norm, however, such behavior indicates extreme emotional and intellectual dysfunction. The emotionally and mentally healthy human is honest, caring, empathic, and gets pleasure from helping other living beings.

The new economics needed to guide our path in a 21st century world will remind us of our responsibility to care for one another and Earth. It will shine a light on what is most essential to our well-being and help us identify and explore pathways to its achievement. To this end, it will challenge us to put cooperation before competition and community well-being before corporate profits. And it will draw from every source of human knowledge and understanding to guide us to the culture, institutions, technology, and infrastructure of a new civilization—an ecological civilization—that secures the well-being of people and Earth in spiritually fulfilling ways. And it needs the physical, mental, and social labor and skills of every person in a global commitment for which we have no historical precedent.

Far from calling for sacrifice, however, even the requirement to reduce the human burden on Earth's regenerative systems by at least 40 percent presents an opportunity to fulfill a long-denied dream of a world of peace, beauty, material sufficiency, spiritual abundance, and creative opportunity for all as we come to embrace the potentials of both our nature and our contributions to life's evolutionary unfolding.

The Quechua peoples of the Andes call this dream *sumac kawsay*, a community-centric, ecological-balanced, and culturally sensitive way of life. It translates into Spanish as *vivir bien* and English as *good living*. Bolivia and Ecuador have written it into their respective constitutions. China calls it an ecological civilization, to which it has written a commitment into its constitution. In 2015, the Parliament of the World's Religions issued a Declaration on Climate Change, which calls on all peoples to embrace “a new ecological civilization and a world of peace, justice and sustainability, with the flourishing of the diversity of life.”

Finding Our Place of Service in Life's Evolutionary Journey

Evolutionary biology is moving beyond its established frame of survival of the fittest to a new frame called symbiosis. This new frame recognizes and honors the deep interdependence of living beings that has long been part of indigenous understanding as captured by the African term *ubuntu*, often translated as “I am because we are.”

Twentieth century economics ignored this reality. But for 21st century economics, it is a defining foundation. We are in this together. The “we” in this understanding includes the whole of life.

Over billions of years, the choice-making ancestors of Earth's countless living species brought life to Earth and Earth to life. Life's evolutionary progress was achieved through the constant labor of Earth's many organisms in complex symbiotic relationships that together created and maintained the conditions essential to their mutual existence.

As we unpack the history of planet Earth, we begin to see more clearly the critical and distinctive role of labor as an inseparable part of living and the source of all that is essential to our well-being. Beyond the planet's original nonliving wealth, all subsequent wealth is the product of the labor of living organisms. Indeed, life exists only by dint of its constant labor to counter the forces of entropy and thus to create and maintain conditions favorable to life on Earth's surface.

Our most immediate experience with the ability of living beings to self-organize is with our own body—the vessel of our consciousness and the vehicle of our agency. Our body is a product of the labor of tens of trillions of individual cells and microorganisms working in complex symbiotic relationship with one another to create a superorganism with abilities far beyond the ability of any individual member cell. The processes by which the body's cells accomplish this miracle continue to defy human understanding.

Through their labor, these cells and organisms manage the active exchange of nutrients, water, energy, and information essential to the life of all. Together they create and maintain the heart that pumps blood throughout our body and the diaphragm that fills our lungs with air. Their labor is continuous, even as we sleep, constantly adapting to ever changing food and water intake and environmental temperatures, while simultaneously distinguishing between toxins and nutrients and between beneficial and invasive microorganisms. This constant management occurs with no known equivalent of money, markets, casting of ballots or central authority. When the cells of the body no longer labor to the benefit of the whole, we declare the body dead.

At a more macro level, the plants and animals of a visible landscape may appear to be silent and inactive, but here too the exchanges of nutrients, water, energy, and information are constant—much of it the work of cells and microorganisms we can see only with a microscope. Here again, we have barely begun to understand the complex details of how it all works. Clearly, however, it does work. And labor is at the heart of it.

In the case of humans, we depend on our labor at the most basic level to acquire and process the products of nature to meet our basic needs. We gather from the fields and forests. We hunt. We sow, we harvest. We prepare, cook, and serve. We shape the stone

and the timber. We mine, refine, and forge the metals. We manufacture, build, and construct. And all the while we care for ourselves, our young, our elderly, and our incapacitated. We increase the yield to our labor through our talent at learning new skills and inventing new tools.

As are all Earth's living beings, humans are children of Earth. Yet we are also a species with a distinctive cognitive ability to create and live by stories that represent our collective understanding of creation, our human nature, and our human place in creation's continued unfolding. This gives us a distinctive capacity for choice far beyond that of any other species. We have the capacity to choose our future and—in substantial measure—the future of Earth and its many species. That bestows on us a profound moral responsibility for the well-being of the whole and a reason for our being.

That we bear such responsibility helps to explain why mentally healthy humans experience a deep sense of spiritual fulfillment when caring for a garden, child, pet, neighbor, or stranger in need. While the very young, the very old, and the seriously disabled may enjoy exemption, the rest of us earn the right to share in the bounty of the whole by fulfilling our responsibility to and for the whole.

The dysfunctional consequences of our fealty to a 20th century economics that instructs us to abandon these responsibilities are legion. We strip the living soil of the nutrients on which its health and ours depends. We subsidize global corporations in ways that make it nearly impossible for smaller community-oriented local businesses to survive. Our universities indoctrinate young people in the idolatry of money in preparation for lives in service to profit-maximizing corporations and to governments dedicated to growing GDP and the financial assets of the wealthiest among us.

We design our cities and towns in ways that make us dependent on cars to fulfill our daily routines. We divide our lands into discrete parcels that disrupt nature's cycles as the few take control of our access to food, water, and shelter to reduce the rest of humanity to corporate servitude.

The result is a society that strips us of the ability as individuals to make many of our preferred moral choices and assures that the moral choices we do make—like recycling or taking public transportation—are difficult and of little significance.

Twentieth century economics assumes that the rewards of economic activity properly go to the owners of financial assets. In contrast, 21st century economics will recognize that the primary rewards properly go to those whose labor created the assets. The recognition that most value comes from labor harkens back to the insights of classical economists such as Adam Smith, David Ricardo, and Karl Marx. Twenty-first century economics will also recognize that we depend on the relationships with fellow workers for both the products of that labor and for the joy of being a contributor.

We are social beings and our most important choices are collective, shaped by the institutions we create. These institutions, like our stories, are purely products of the human mind. Therefore, they can be changed by the human mind.

Aligning Our Institutions with Our Needs and Responsibilities

Human institutions, including the institutions of money, business, government, religion, and the nation state are all distinctive to humans. Although these institutions have a decisive influence in shaping our behavior and are treated almost as if they were natural phenomena, they are solely our mental creations and have no reason to exist other than to serve us.

Yet in substantial measure, our most powerful institutions now rule us—and do so to our extreme peril. Hope lies with our ability to shed or transform dysfunctional institutions, a process that begins by changing the narrative that sustains them.

Flawed narratives and the institutions they sustain can hold sway long beyond their useful life. Yet seemingly invincible institutions can quickly crumble once the story that sustains them loses credibility. Think of the sudden disintegration of the Soviet Union and the collapse of apartheid in South Africa.

Replacing failed institutions with beneficial institutions is a far more difficult process. Success begins with a compelling alternative narrative.

As currently structured, power in our institutions flows from the top down, leaving people subservient to corporations and financial markets in fundamental contradiction to the basic principles of democracy, markets, and healthy living systems. Nearly all humans now depend for their living on rogue institutions of business and government that operate largely on autopilot beyond human accountability. Individuals find their short-term survival depends on serving these institutions in ways that threaten the long-term survival of both humans and the living Earth.

In a healthy society, power flows from the bottom up. People create governments and governments create corporations. We urgently need a new economics to guide us in transforming the institutions of business and government to distribute power locally and equitably to support holonic structures that organize from the bottom up.

The institutions that currently empower money and corporations cannot and will not of their own volition transform from within to empower people and community. We the people, however, can empower ourselves by changing our shared story through bottom up social movements as we grow new institutions to serve the future we seek, in alignment with the values we share. That story will be the conceptual foundation of a 21st century economics.

Money as a Useful Tool

Within the reality-based story of 21st century economics, money is just a number of no intrinsic value. It is important only because we agree to accept it as a token of exchange in market transactions in which we buy and sell things of real value. It is useful in that way, but should be considered a tool, not a purpose, of the economy.

In the imaginary world of 20th century economics, money is much more than a number, it is *capital*. Capital is an ambiguous, all-purpose word that is most useful when we want to sound sophisticated, but have no idea what we mean. The statement, “We need capital”

most likely means, “I have no idea what we need, but I assume that with enough money we will be able to buy it.”

Any country with its own currency can create money with a computer keystroke. Having more money does not in itself increase well-being.

A 21st century economics will recognize that money is simply a token of exchange. It is useful for that purpose, and its management is important in shaping the economy and its priorities. But simply producing more money does not make society better off—and can be deeply harmful.

Our individual dependence on money to obtain both essential and non-essential goods and services, leaves us vulnerable to the illusion that our well-being grows as the numbers on our paycheck, in our bank account, or on pieces of paper in our wallet grow.

If we are among society’s more fortunate, we think that society is getting richer because we as individuals are getting temporarily richer and thus temporarily command more of the available real goods. But this is happening even as the society is becoming collectively poorer and the social, political, and environmental systems essential to the well-being of all are headed for terminal collapse.

Take farmland as an example of this paradox. As the amount and fertility of farmland declines, scarcity increases the market value of what remains. Yet our ability to meet our needs for food and water declines. Or take the case of urban housing. Financial assets can grow as well-being declines. As housing prices rise, speculators step in to buy and hold often empty houses and luxury apartments as opportunities to store and grow their financial assets. This drives prices even higher, thus affirming the wisdom of their purchase. Meanwhile growing numbers of people are forced into homelessness, possibly living on streets next to vacant apartments. Financial assets grow as relationships disintegrate and well-being declines.

As we seek to transform economics to guide us to a 21st century economy, what are the key principles we should follow? Here are eight suggested principles.

Eight Principles of 21st Century Economics

The understanding of life and human possibility outlined above can be distilled into eight essential principles of a 21st century economics to guide our path to a viable future. Each raises significant questions we can adequately answer only through our collective learning over time.

Principle #1: Indicators. Evaluate the economy’s performance by indicators of the well-being of people and planet; not the growth of GDP.

We get what we measure. In the mid-20th century, most nations made growing GDP the goal of their economic policy. That continues to be their priority.

The results of this experiment are now in. The focus on growing GDP worked extremely well to grow the fortunes of billionaires so [they could claim an ever-growing share](#) of the remaining real wealth of a dying Earth. It left much of humanity, however, without

secure access to food, water, shelter, and other basics and it took no account of the fact that we depend on the regenerative capacity of a finite planet that must be maintained and shared.

Managing an economy to maximize GDP growth is like flying an airplane with a goal to maximize airspeed, guided only by an airspeed indicator. Once aloft, the pilot will maximize air speed by putting the plane in a nosedive. The plane will attain maximum speed in a steep dive—until it crashes.

Managing a complex economy to secure the well-being of people and planet requires a dashboard of indicators that guide us in the complex processes of maintaining a balanced relationship between people and Earth while meeting the essential needs of all. The starting point might be based on the indicators advocated by Kate Raworth in her book *Doughnut Economics*.

Some questions raised by this Principle: What are the most important indicators of human and planetary well-being? How are they best monitored? And how is performance best advanced?

Principle #2: Beneficial Use. Use resources only to support life's capacity to regenerate; not to destroy it.

The first logical step in reducing the human burden on Earth is to eliminate activities that, though they may generate profits, make no net contribution to—or diminish—the well-being of people and Earth. This includes war and preparations for war, advertising of harmful or unneeded products, financial speculation, and industrial agriculture that kills living soils, pollutes air and water, and undermines human health. We can eliminate most needs for driving by designing infrastructure to support people in living close to where they work, shop, and play. We can eliminate most global movement of people and goods by keeping production and consumption local, and relying on recycled materials. We can further reduce the need for physical travel by using communications technologies to share ideas, technology, culture, and learning with little or no need for physical travel.

Eliminating harmful activities would significantly reduce humanity's ecological footprint and simultaneously produce a massive increase in human well-being. Yes, there would be lost jobs. But there are many ways the people freed up can be put to work to advance the well-being of people and planet. These include caring for and educating our children, caring for the elderly, restoring the health and vitality of Earth's regenerative systems, and rebuilding infrastructure in ways that reduce dependence on fossil fuels and simultaneously strengthen our beneficial connections with one another and nature.

We also have win-win opportunities to reduce environmental burdens that weaken or eliminate family and community relationships. For example, the current trend toward single-person households isolates us from one another and eliminates opportunities for sharing shelter, tools, furniture, utilities, food preparation, and other essentials. The related disruption of family and community self-care reduces well-being and increases the need for government-funded social safety nets.

Some question raised by this Principle: How much can we reduce our human burden on Earth by eliminating uses of human labor that are harmful to or make no beneficial contribution to the well-being of people and planet? How do we best accomplish those reductions and reallocate the labor involved?

Principle #3: Use Rights. Concentrate use rights and responsibilities in the hands of those who provide the labor on which the well-being of the community depends, not in the hands of those who exploit life's labor to grow financial assets.

Our existence depends on life's labor. Those who possess the physical and mental ability to do so, earn their right to share in the surplus of the whole through their paid and unpaid human labor in productive service to the whole. Their proper reward is in proportion to the labor they invest in sustaining or enhancing the regenerative yield of those assets. This is basically the concept of use rights common in traditional societies.

Twentieth century economics asks "How can we create more jobs?" Twenty-first century economics asks: "What work is needed to enhance and secure the well-being of people and Earth and how can people whose potential is not currently well utilized be engaged in doing that work in ways that align with their interests and skills and fulfill their material and self-worth needs?"

In a healthy society, no person should be without a means of living and a respected, meaningful means of contributing to the whole consistent with their abilities and distinctive sources of joy. Creating a society that achieves this outcome for all people will be a defining priority of 21st century economics and will most certainly require a radical redistribution of both income and ownership through measures that include a variety of forms of progressive taxation.

In public debate, we assume that society's defining economic choice is between capitalism—ownership by transnational corporations, or socialism—ownership by national governments. Narrowing the choice to these two simplistic options evades the more essential questions. Do the returns go primarily to those who provide the labor that creates the real value? Or do they go to those who claim ownership of the product of labor not their own? If the chosen system includes individual ownership rights, how much inequality in the distribution of those rights is appropriate and how is an equitable distribution of those rights best achieved and maintained?

A 21st century economics will recognize that too often the current economic system channels rewards to those who claim ownership to the exclusion of those who provide useful labor and places no limits on the concentration of those rights by those who seek only to exploit the labor of others. The obvious fix begins with direct worker or community ownership. Such ownership needs to rest on an ethical frame that recognizes our individual well-being depends on the well-being of the whole.

Such restructuring will end society's division between a privileged owning class and an indentured working class and assure that everyone who provides beneficial labor also

shares in ownership. Ownership by some distant corporation or government will be considered acceptable only under highly distinctive circumstances where a more democratic alternative is not available.

Some questions raised by this Principle: How are society's needs for manual and intellectual labor best met? How are the rights and responsibilities traditionally associated with the ownership of productive assets most fairly and effectively allocated to those whose labor created the assets?

Principle #4: Money. Create society's money supply through a transparent public process that advances the common good; not through secret processes that grow the profits of for-profit banks and financiers.

In a modern society in which access to the essentials of life depends on money, those who control the creation and allocation of money control the lives of everyone. It is therefore essential that the process of money creation and allocation be public, transparent, and accountable to the people whose well-being depends on it. Every citizen needs to understand how the process works so they can participate in holding their financial institutions accountable. It defies reason to assume that society benefits from giving this power to global for-profit corporations dedicated only to generating profits for the already richest among us.

When private banks issue a loan, they introduce new money into the economy for which they expect society to provide them with an interest return. But they do not create the money needed to pay that interest. Consequently, society must continuously grow GDP to create new borrowing (i.e., new debt) sufficient to pay the interest on previous borrowing. Without that growth, massive loan defaults will force private banks into bankruptcy. As bank accounts disappear, economic exchange dependent on money will halt, and the economy will collapse—unless government steps in to bail out the banks.

By conventional market logic, the banks that create the problem deserve to fail—but they are too big for the government to allow them to fail. It is a sophisticated version of a Ponzi scheme rigged to assure that the rich win and the society pays.

As history demonstrates, the question is not whether a crash will happen again. Unless the system is transformed, it is only a question of when the next crash will come. When it does, the logic of 20th century economics will side with the bankers and call for a government bailout. Twenty-first century economics will counsel a government takeover of the failed banks as a step toward making money creation public and accountable in service to the public good.

The power to create money is the power to create unearned buying power. That power must reside with public institutions that direct the buying power thus created to the service of public ends like education and infrastructure. The processes involved must be public, transparent, and publicly accountable. The power to create the basic money best resides in public banks, supplemented by locally-owned cooperative banks through which

local people aggregate their savings to finance loans to themselves to support local home and business ownership.

Some questions raised by this Principle: How can we organize and manage a money system to facilitate beneficial exchange to secure the well-being of people and Earth, while minimizing speculation and the concentration and abuse of financial power? What are respective roles of public and cooperative banks? Is there a legitimate beneficial role for private banks? How do we move beyond the expectation that financial assets and their claims on real resources will grow perpetually and effortlessly?

Principle #5: Education. Organize and manage education to support lifetime learning in service to life-seeking communities; not preparing for standardized tests on the way to obedient service to profit-maximizing corporations.

As life is labor, so too, life is learning and sharing. The navigation to a new civilization will require dynamic social learning on an unprecedented scale. Yet very few education programs are designed to prepare students for lifetime learning.

It is especially troubling that to this day, our most prestigious universities feature economics courses that advocate societal psychopathology as a human ideal, give legitimacy to institutions that serve only money with no responsibility for the common good, and consider knowledge from other disciplines to be irrelevant to economic choice making.

The 21st century economics by which we prepare youth for future leadership must build on a moral foundation that recognizes our responsibility to and for one another and Earth, favors cooperation over competition, and prioritizes life over money and community well-being over corporate profits. It will likely need to be taught in programs beyond the control of established economics departments.

More generally, education for a 21st century world must recognize that no one knows how to get where we now must go. Education cannot provide us with answers we do not have. It can, however, prepare us to be life-long learners skilled in asking the right questions and in working together to find and share answers appropriate to our specific situation. This is a very different process than teaching students to compete to provide the largest number of textbook approved answers on a standardized test.

Questions: How can educational institutions transition from developing skills in mimicking standard answers to developing skills in lifelong individual and societal learning? What are the distinctive intellectual tools needed by professional managers and policy makers dealing with 21st century challenges?

Principle #6: Technology. Create and apply technology only to serve life; not to displace or destroy it.

Technology must be life's servant, not life's master. Most technologies have potential for varied applications, some beneficial and some harmful to life. To choose applications based solely on which will produce the greatest financial return is collective madness. The technophile's drive to create an economy with no need for humans, should qualify as a crime against humanity.

Humans have the right and the means to favor the development and application of technology to reduce destructive environmental impacts, restore the regenerative capacity of Earth's living systems, and facilitate global understanding, cooperation, and learning as we transition to an ecological civilization. We currently manage patents globally to limit piracy. We can as well manage them globally to limit potentially harmful applications, much as we require the approval of new drugs. These systems are currently imperfect. Finding ways to improve them will be among the challenges facing 21st century economics.

Some questions raised by this Principle: How can society assess the potentials of new technologies and, distinguish between beneficial and harmful uses? How can we advance beneficial uses of technology that are not profitable while minimizing the harmful uses that are profitable?

Principle #7: Community. Organize as cooperative, self-reliant, regenerative communities that share resources, knowledge and technology to serve life and ensure one another against unforeseen risks; not as incorporated pools of money competing to grow by monopolizing resources, production, employment, knowledge, and technology to exploit life for financial gain.

Life in the natural world self-organizes everywhere as self-reliant, local communities that maintain constant cyclical flows of resources to meet local requirements with minimal need for the distant inputs, such as those provided in nature by specialized species like migratory birds and fish. Except for toxins that nature sequesters and energy that the sun continuously renews, everything in nature is reused and recycled in perpetuity as the wastes of one become food for another. Up until less than a hundred years ago, humans did much the same as community members shared resources, risks, knowledge and technology. We can learn to do it again, this time with the assistance of modern knowledge and technology.

As communities we can assure the education of all our children, enable everyone to secure a livelihood through opportunities for useful and meaningful work, and provide for those who suffer disability from aging, accident, and illness.

Urban and rural dwellers can rediscover their interdependence. Cities can meet their needs for food, timber, fiber, and pulp from nearby rural areas and rural areas can regenerate their soils with bio-wastes from nearby urban areas. Cities can provide cultural and educational opportunities for both urban and rural dwellers. Rural dwellers can

provide urban dwellers with food, water, and nature immersion experiences, including summer agricultural work opportunities for urban youth during summer vacation.

Suburbs that now occupy massive tracts of land for low-density, low-interaction, energy-inefficient living can convert to either high-density, high interaction, energy efficient urban habitats, or low-density, high-nature intensive rural habitats. This will improve resource efficiency and quality of life while restoring natural regenerative capacity.

As cities restructure to eliminate dependence on cars, people will walk, cycle, and use public transportation, meeting and greeting on the streets, in sidewalk cafes, and in parks with beautiful gardens. The car-free cities of an ecological civilization will feature multi-generational, multi-family living units that function as vibrant eco-communities sharing facilities, tools, resources, and labor—with residents looking out for one another and their children as intact tribal communities still do.

Some questions raised by this Principle: How can we reorganize society to shift power from profit-seeking transnational mega-corporations to a holonic system of deeply democratic life-serving communities of place that link urban and rural areas? How can we use beneficial market dynamics to empower people and nature to meet their needs through symbiotic processes of self-organization?

Principle #8: Population. Seek a mutually beneficial population balance between humans and Earth's other species; not the dominance of humans over all others.

The health of any natural ecosystem depends on its ability to balance the populations of its varied species. While we do not fully understand how these dynamics work in nature, populations are constrained by interactions among species and the limitations of the resources on which they all depend. Just as healthy bodies mobilize against rogue cancer cells, ecosystems mobilize against rogue invasive species.

This dynamic suggests that either humans will self-manage their reproduction and distribution to align with Earth's needs and capabilities or Earth will define us as a rogue species and attempt to do it for us—which may already be happening.

To voluntarily control our population numbers, we can provide educational and occupational opportunities for women and make fertility management methods freely available to all who seek them. To manage our population distribution, we can facilitate voluntary resettlement from over- to under-populated countries and localities.

Some questions raised by this Principle: What is the optimal human population size and distribution consistent with the regenerative capacities of a finite Earth? How do we best transition to that population size and distribution through voluntary actions beneficial to all concerned?

A narrow focus on money and financial return rendered 20th century economics wholly inadequate to the task of guiding us in managing a global economy on a living Earth. The well-educated 21st century economist will be schooled in ethics, institutions, culture, biology, politics, and much more. The reinvented discipline will seek fact-based objectivity while applying its knowledge and expertise to purpose-driven work to assist humanity in confronting its most essential and complex choices.

Many people believe they don't understand economics because to them it makes no sense. It turns out that many such people likely do understand economics, because as 20th century economics currently is taught and practiced, it does not make sense.

The well-respected economist Kenneth Boulding once observed, "Anyone who believes that exponential growth can go on forever in a finite world is either a madman or an economist." You might say the same for anyone who believes that society is best served by people intent on maximizing the growth of their personal stash of money. Yet we cling to this deeply flawed economics. For lack of an established alternative, we continue to teach it to the youth who will be tomorrow's leaders.

A society that destroys its essential means of living to make money for a privileged few can hardly claim to be intelligent or civilized. Modest personal adjustments will not correct the failures of an inherently self-destructive cultural and institutional system. Our future depends on a unified human effort dedicated to driving deep system change. For example:

- Going beyond stopping the use plastic bags, we can create an economy that produces no waste.
- Going beyond buying organic, we can create a food system in which all food is produced in ways good for Earth and healthy for people.
- Going beyond asking corporations to be responsible, we can break up concentrations of corporate power and render the pieces accountable to the communities in which they do business by converting them to worker and community ownership.
- Going beyond protesting a current or proposed war, we can dismantle the apparatus of war and the military industrial complex.
- Instead of buying an electric car, we can design neighborhoods and transportation networks to do away with most need for cars.
- Instead of providing everyone a guaranteed income, we can provide everyone with work that meets their material needs with dignity.
- Instead of measuring and growing GDP, we can measure and grow the well-being of people and planet.
- Instead of accepting all migrants fleeing social and environmental collapse, we can seek to secure the social and environmental health of all places where people live and the right of every person to a livable place.

The basic frame of 21st century economics contrasts sharply with that of 20th century economics. The new frame is far more complex and nuanced. Yet it is likely that most people will readily grasp it because it is logical, consistent with foundational ethical principles, and reflects the reality of our typical daily experience in which most people are kind, honest, and find pleasure in helping others.

Transdisciplinary and inclusive of non-specialists, the new economics will welcome the engagement and contributions of all who embrace the goal of a society dedicated to the well-being of people and planet. Ideally, we will all strive to be competent 21st century economists possessed of the moral commitment on which the well-being of people and planet in the 21st century depends.

This working paper was written by author, independent scholar, engaged citizen, and former Harvard Business School professor [Dr. David Korten](http://davidkorten.org) as a contribution to discussions framing a new economics for the 21st century. The development of a 21st century economics is an ongoing process and this working paper will be updated from time to time and posted online at: <https://davidkorten.org/a-21st-century-economics-for-the-people-of-a-living-earth-2nd-revision/>. It may be freely reproduced and shared in whole or in part.

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