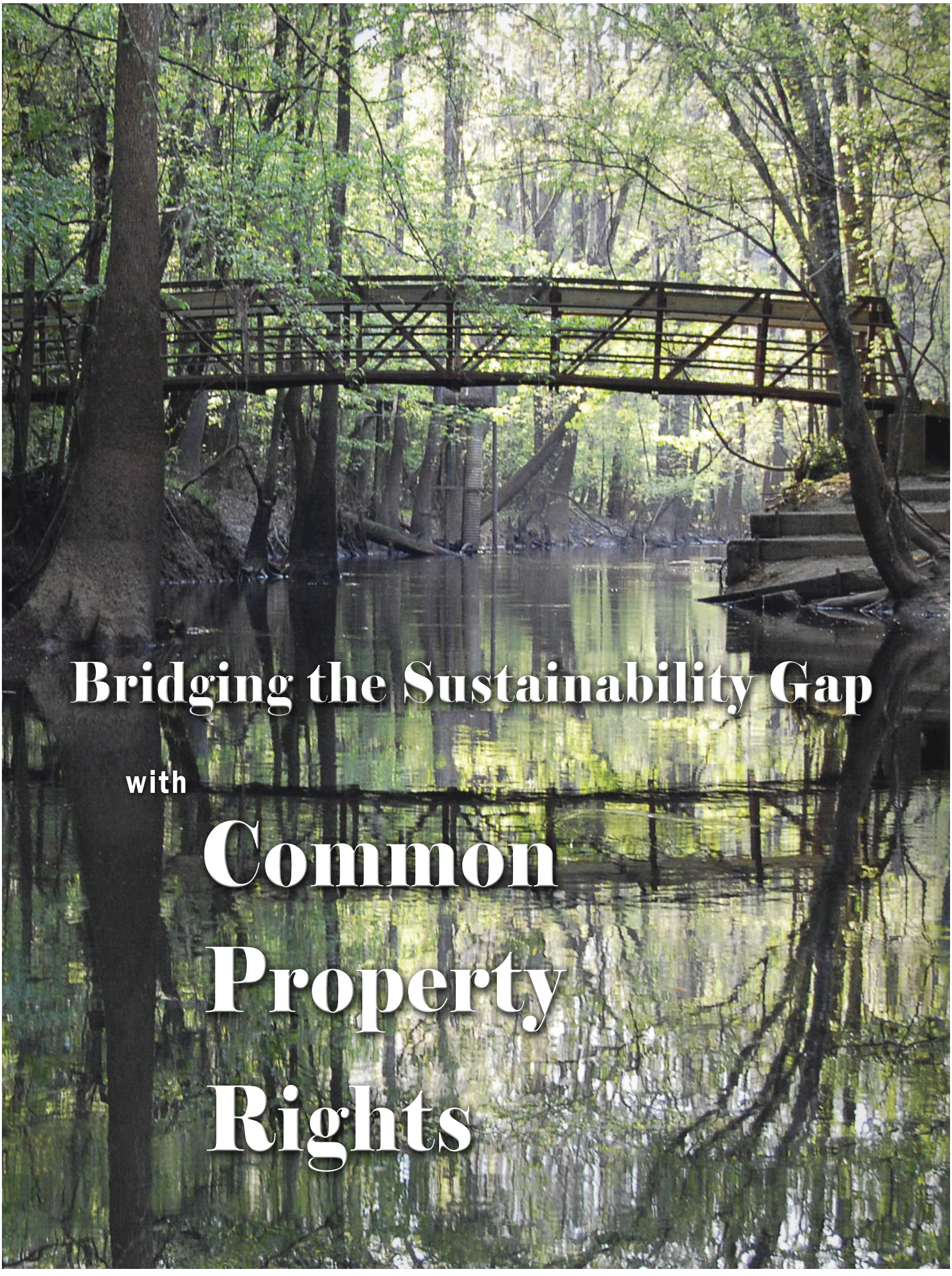
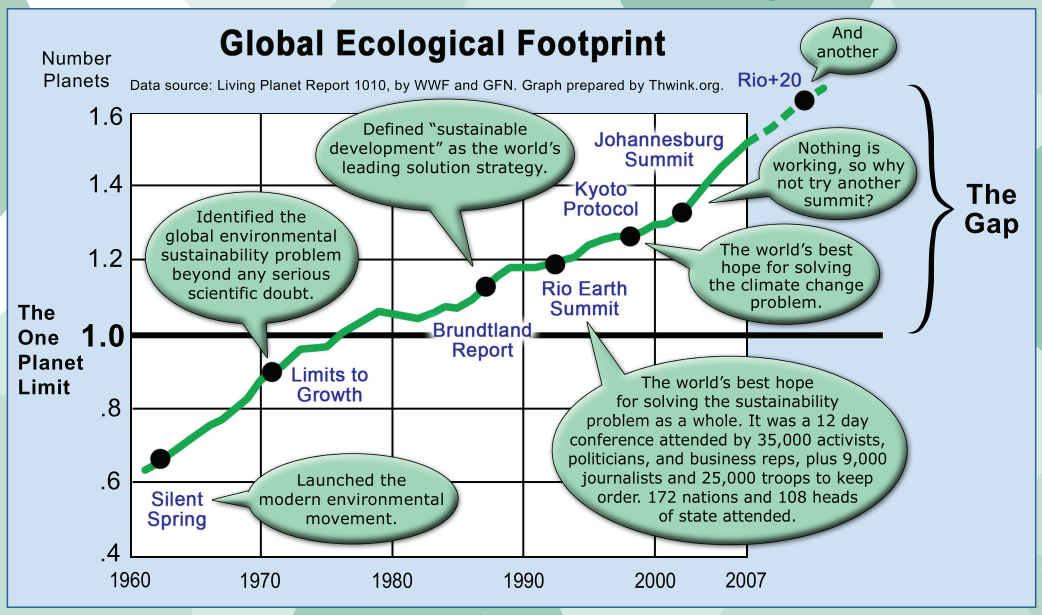

Bridging the Sustainability Gap
with
Common
Property
Rights

# Why Are Popular Solutions Like These Not Working?




The graph shows how despite the efforts of millions of environmentalists for over forty years, the sustainability problem is growing worse with no overall solution in sight. The planet's footprint is now at about 50% overshoot with no sign of dropping to a sustainable level in time to avoid collapse.

Solutions like those on this page are having little effect. **Problem solvers are unable to close the gap** between where we are now and where we need to be: at or below the one planet line.

Why is this?

Biomimicry

Family Planning

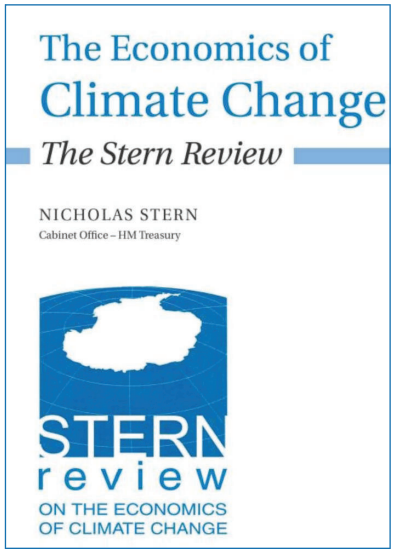
# Because Popular Solutions Do Not Resolve Root Causes.

## Instead they attempt to resolve intermediate causes.

That won't work because *root causes* cause *intermediate causes*, which in turn cause *symptoms*.

The universal consensus is that the economic cause of the sustainability problem is externalized costs. For example, in 2007 the *The Economics of Climate Change: The Stern Review* came to this widely quoted conclusion:

**"We have a market failure, indeed the biggest market failure the world has ever seen."**




A **market failure** occurs when a market allocates scarce resources so inefficiently that unnecessary suffering has occurred. To an economist all market failures have the same cause: market inefficiency. Somehow the signals that prices send to buyers and sellers didn't work well. WHY? Because there were costs of some kind that were not in prices but should have been.

In the sustainability problem what's missing in prices is the true cost of environmental impact. These missing costs and their impact are known as **externalized costs**. They simply aren't in a price. Instead, they are external to the transaction.

If the cause is externalized costs then the solution is obvious: internalize those costs. This has lead to a gaggle of solutions to do exactly that. At the top of the list sits market based solutions like cap and trade, pollution taxes, and offsets. Further down the list are all the rest of the solutions on the facing page, because ultimately every one of these solutions contributes to someone paying the externalized cost or changing their behavior so as to avoid that cost.

But guess what? Popular solutions are not working. They are unable to close the sustainability gap. Each solution is developed and then thrown with great enthusiasm at the sustainability problem in hopes of solving it. Each new generation of solutions *should* work. But they don't, as the relentless rise of the world's Ecological Footprint proves all too clearly.

What can we conclude from this little examination of the facts? Thwink.org has come to a strong conclusion, one central to our research: **Externalized costs cannot be the root cause.** Otherwise popular solutions would be working. Therefore externalized costs must be an intermediate cause.

This raises a tantalizing question. The Law of Root Causes tells us that *all problems arise from their root causes*.

So what is the root cause?

### Examples of Externalized Costs

The cost of cleaning up ground and water pollution, like oil spills, chemicals, and agricultural runoff.

The increased health and other costs incurred by millions of people due to air pollution. The ultimate air pollution problem is climate change.

The cost to future generations of many kinds of natural resource depletion, like topsoil loss, deforestation, the collapse of many fisheries, and the loss of marine phytoplankton, which will reduce the long term amount of atmospheric oxygen.

# The Root Cause Is High Transaction Costs for Managing Common Property Sustainably

The right abstraction can make all the difference in analyzing a knotty problem.

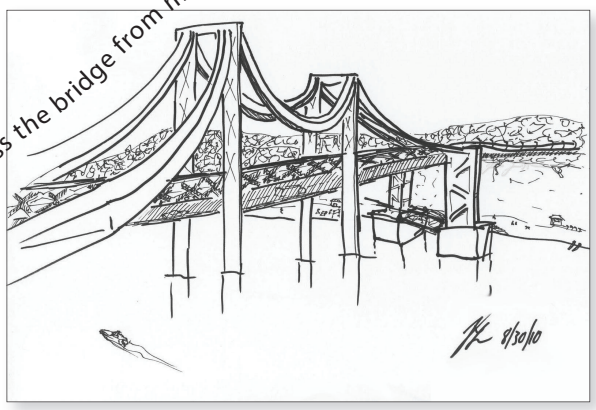
**Transaction costs** are the costs of arriving at a buying or selling decision so that a market transaction can be made. Transaction costs include the cost of bargaining (agreeing on a price and other terms like quality, delivery, and financing), finding a buyer or seller, finding the cheapest price or the highest quality, inspecting the product, and so on. Transaction costs exclude the actual cost of production.

BARTER ECONOMY

*Meager and inefficient due to high transaction costs*

Today nearly everything has a price. But suppose we went back to the days of **barter economies,** where nothing had a price because money didn't exist and people were mostly self-sufficient. Your transaction costs would be sky high due to all that haggling over a price, all that effort to find someone who has what you need and wants what you have, and so on. "Can I trade half a cow for those ten bags of potatoes? What? You want chickens instead?" In a world like that your transactions costs would be astronomically high so there would be far fewer transactions. Such a world would have a meager and inefficient economy.

That's why **a price for everything** was invented long ago all over the world. After that transaction costs fell dramatically. Half a cow became a hundred rupees. This was so transformational it allowed societies to cross the bridge from meager and inefficient to rich and efficient.



# MARKET ECONOMY

*Rich and efficient due to low transaction costs*

After the bridge was crossed there was no turning back.

Why was this such a permanent change? Because one of the **main root causes** of inability to manage private property efficiently had been resolved. No one knew it in those terms at the time, but that's what happened.

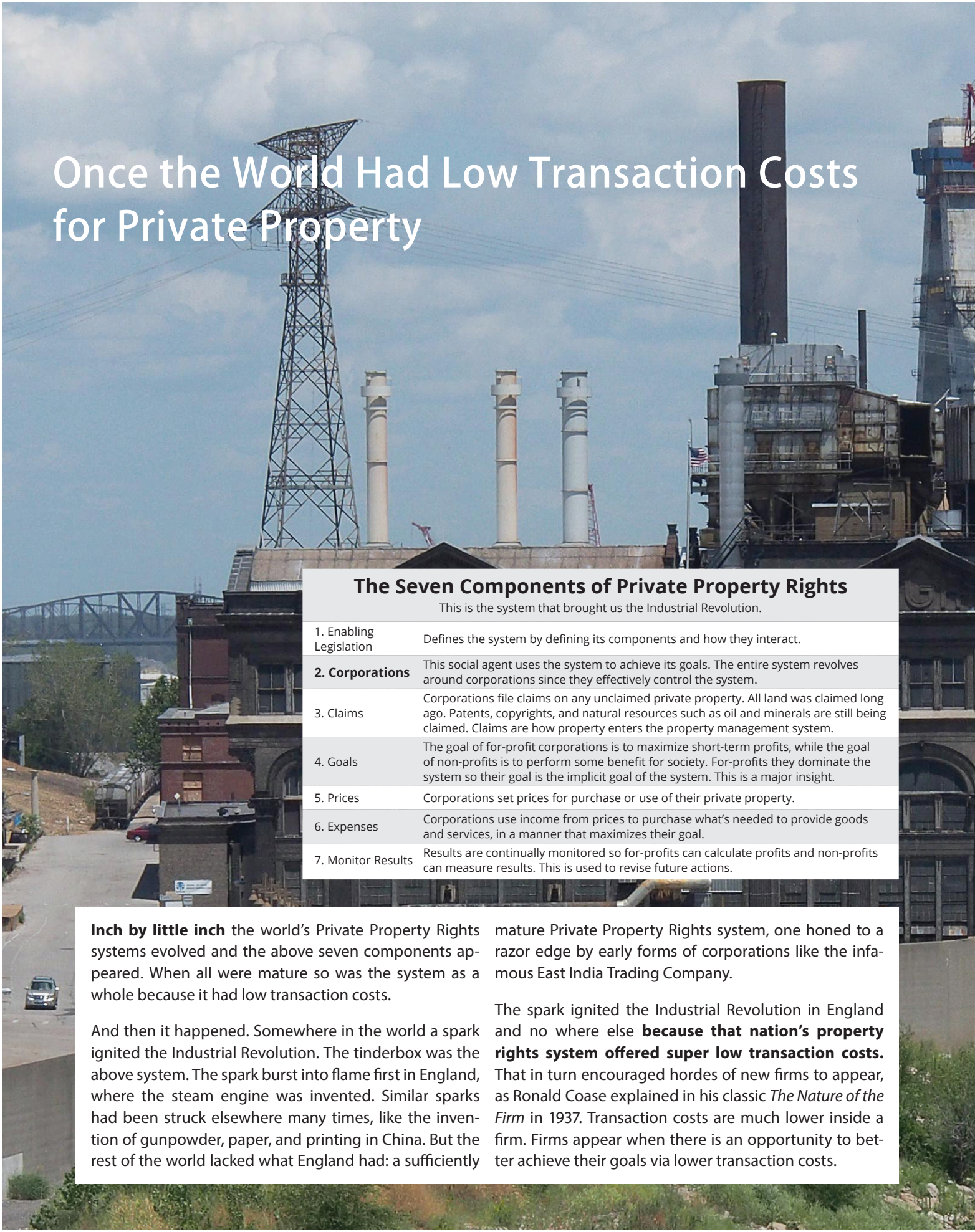
Today we live in a **market economy.** Producers are free to set prices to whatever they want. Consumers are free to pay whatever they want. The magic of "a price on everything" is what makes a supply and demand economy work so well.

The problem is that so far society has crossed the bridge only for *private property*. Management of the world's *common property*, like the air we breath and the water we drink, remains stuck in the equivalent of a barter economy. Environmentalists are forced through endless rounds of bargaining, lobbying, cajoling, campaigning, and so forth to bring each common property problem into sustainability via the solutions on page two. Under the covers these are all market based. They all internalize the cost of environmental impact via prices for that impact, either directly or indirectly. The long road to setting those prices is transaction costs. These costs are so expensive that most sustainability problems go unsolved. Exorbitantly high transaction costs are preventing externalized costs from being internalized.

Therefore externalized costs must be an intermediate cause. The cause of so many externalized costs for common property is high transaction costs, which is **the root cause.** This is a counterintuitive conclusion, but the facts are the facts.

History has spoken. Setting a price on everything was the bridge that took society from low to high economic efficiency. The ultimate result of that change was the Industrial Revolution, because:

# Once the World Had Low Transaction Costs for Private Property



## The Seven Components of Private Property Rights

This is the system that brought us the Industrial Revolution.

| | |
|---|---|
| 1. Enabling Legislation | Defines the system by defining its components and how they interact. |
| **2. Corporations** | This social agent uses the system to achieve its goals. The entire system revolves around corporations since they effectively control the system. |
| 3. Claims | Corporations file claims on any unclaimed private property. All land was claimed long ago. Patents, copyrights, and natural resources such as oil and minerals are still being claimed. Claims are how property enters the property management system. |
| 4. Goals | The goal of for-profit corporations is to maximize short-term profits, while the goal of non-profits is to perform some benefit for society. For-profits they dominate the system so their goal is the implicit goal of the system. This is a major insight. |
| 5. Prices | Corporations set prices for purchase or use of their private property. |
| 6. Expenses | Corporations use income from prices to purchase what's needed to provide goods and services, in a manner that maximizes their goal. |
| 7. Monitor Results | Results are continually monitored so for-profits can calculate profits and non-profits can measure results. This is used to revise future actions. |

**Inch by little inch** the world's Private Property Rights systems evolved and the above seven components appeared. When all were mature so was the system as a whole because it had low transaction costs.

And then it happened. Somewhere in the world a spark ignited the Industrial Revolution. The tinderbox was the above system. The spark burst into flame first in England, where the steam engine was invented. Similar sparks had been struck elsewhere many times, like the invention of gunpowder, paper, and printing in China. But the rest of the world lacked what England had: a sufficiently mature Private Property Rights system, one honed to a razor edge by early forms of corporations like the infamous East India Trading Company.

The spark ignited the Industrial Revolution in England and no where else **because that nation's property rights system offered super low transaction costs.** That in turn encouraged hordes of new firms to appear, as Ronald Coase explained in his classic *The Nature of the Firm* in 1937. Transaction costs are much lower inside a firm. Firms appear when there is an opportunity to better achieve their goals via lower transaction costs.

# Corporations Could Appear and the Industrial Revolution Could Begin.

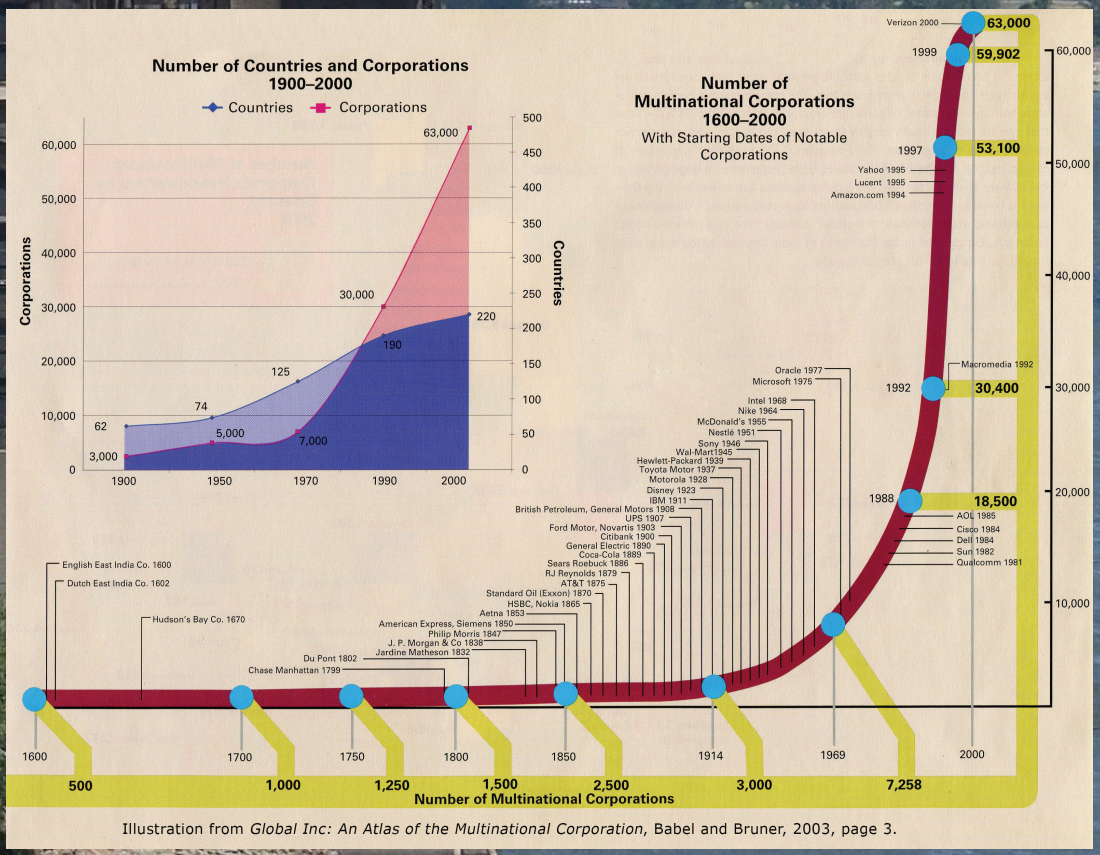



Illustration from *Global Inc: An Atlas of the Multinational Corporation*, Babel and Bruner, 2003, page 3.

The Industrial Revolution began around 1800. Driving it was the explosive growth of corporations, especially large ones like on the graph.

It all fits together. Once the world had a comprehensive system offering low transaction costs for *private property*, corporations could appear and the Industrial Revolution could begin.

Nature loves reuse. There's a reusable pattern here. Let's see if we can do the same thing for *common property*.

# It Can Happen Again. Once the World Has Low Transaction Costs for

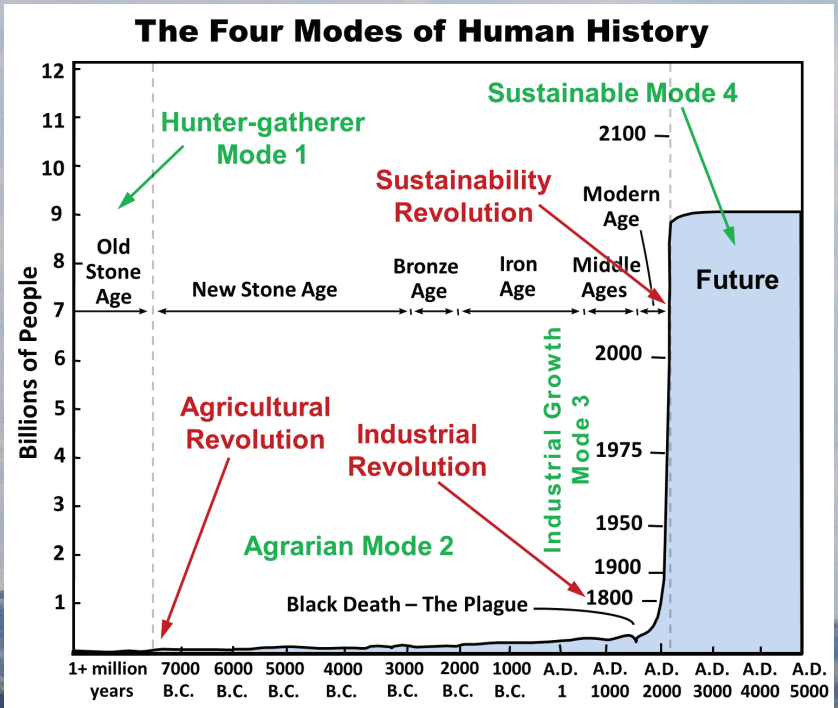
# Common Property

## The Seven Components of Common Property Rights

This system, or one like it, can bring us the Sustainability Revolution.

| | |
|---|---|
| 1. Enabling Legislation | Defines the system by defining its components and how they interact. This can be simple because so much private property law is reusable. It's easily applied to common property. All that need be specified is the differences between Private and Common Property Rights. |
| **2. Stewards** | Stewardship corporations are formed. Stewards must be non-profit to avoid a conflict of interest. Each has the chartered goal of performing a specific service for the good of humanity. Stewards are trusted public servants who work for the common good. |
| 3. Claims | Stewards file claims on any unclaimed common properties needing wise stewardship. Claims allow the solution to spread naturally and efficiently, and to thus eventually solve the entire problem. This is identical to how all land was claimed long ago. Once a claim is accepted the steward doesn't own the property. It owns the right to manage it for the long term good of all. Thus Common Property Rights could more accurately be called Common Property Management Rights. |
| 4. Targets | After a claim is approved the government and the steward set the targets for that common property, such as allowable levels of pollution. The objective is to meet the sustainability targets with the lowest fees possible. Just as prices on new products come down to the lowest possible level over time, fees will do the same. |
| 5. Fees | Stewards charge fees for use of their common property. This is a "user fee" per unit of ecosystem service use, such as one dollar per pound of a pollutant or ten cents per codfish caught. A fee is not a tax. Psychologically and legally, fees are the price of providing a sustainable ecosystem service. Fees will start low to avoid shocking the system, and then will be gradually raised to the level required to meet the targets. |
| 6. Buys | Fees are spent on buys, as the steward "buys" the health of its common property back. Buys are the expenses of providing a sustainable ecosystem service, such as education, R&D, implementation cost assistance, and cost of monitoring. Special care will be taken to minimize transition hardships. The more efficiently buys are spent, the lower future fees will be. |
| 7. Monitor Results | Stewards monitor the health of their common property to adjust fees up or down and to adjust how buys are spent. The idea is to raise fees just high enough to meet the targets. |

# Stewards Can Appear and the Sustainability Revolution Will Begin.




Graph source: Pop. Reference Bureau and UN, *World Pop. Projections to 2100* (1998). Modified by Thwink.org to show modes, revolutions, and pop. leveling out at 9B not 11B.

The graph shows the four main modes of history and the revolutions that caused (or will cause) systemic change from one mode to the next.

**The first mode change** was the Agricultural Revolution. It was precipitated by a rather simple invention: the idea that if you saved the best seeds or animals from one generation and used them to produce the next, you would soon have far more food that you could possibly scavenge by hunting and gathering.

**The second mode change** of the Industrial Revolution was, in retrospect, triggered by another simple invention: a universal comprehensive system of Private Property Rights. We take this so much for granted that we barely even notice it.

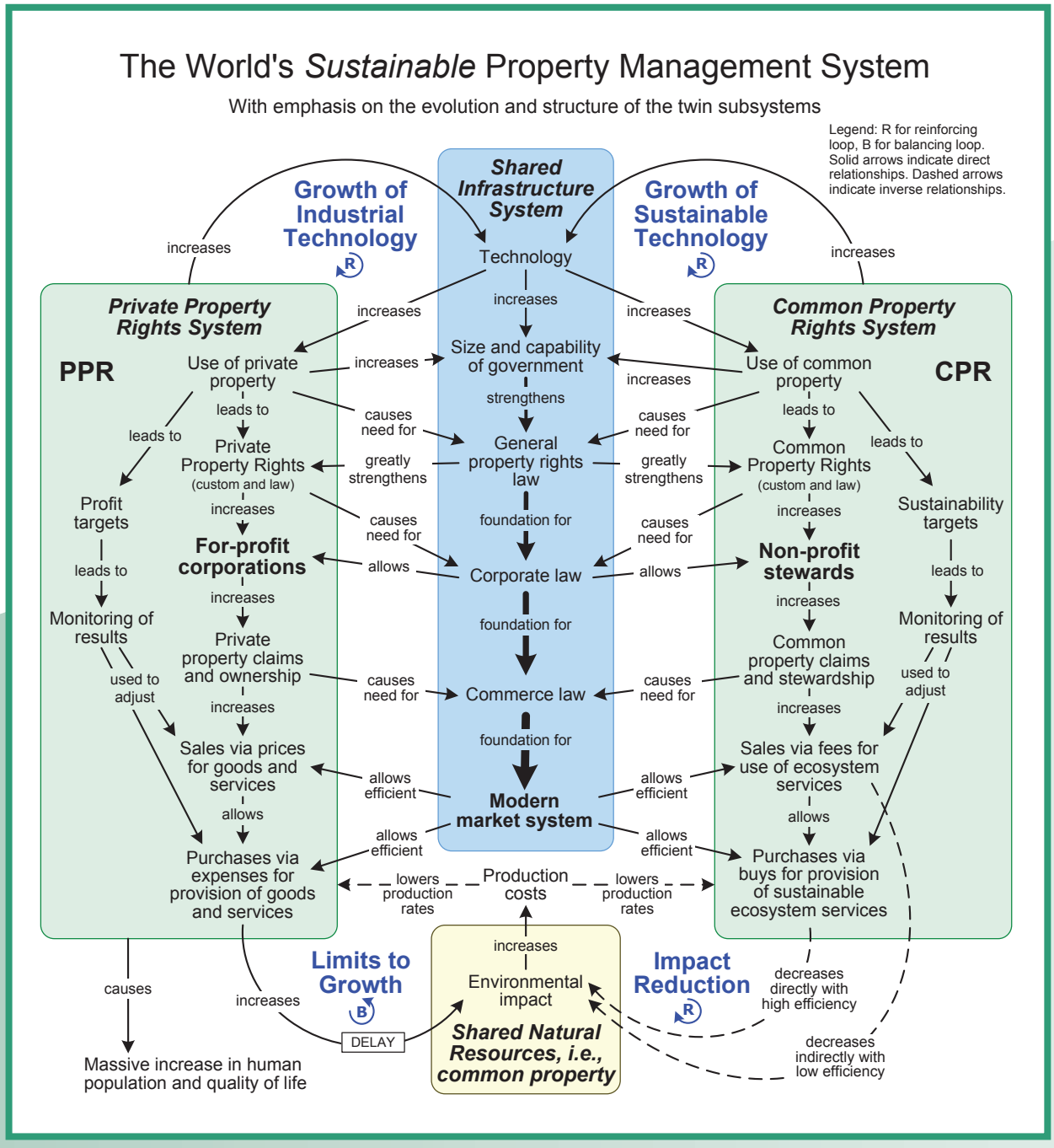
**The third mode change** needs to be the Sustainability Revolution. THE question of our time is how to catalyze that revolution and make it happen overnight before we run out of time and runaway ecological tipping points are reached.

**The Seven Components of Common Property Rights** tell us that what's needed is to create the first few stewards, release them into the world, stand back, and watch as they multiply as fast as corporations did. That would be the right spark in the right tinderbox.

It can be done because it's been done before. We all know how fast the Industrial Revolution spread once it began in England around 1800.

**Those who can learn from the past can control the future.** What do you think will happen if we create the mirror image of Private Property Rights, call it Common Property Rights, and populate it with stewards instead of corporations? What would it look like?

# The Future of Sustainability Could Look Like This




The feedback loops show how the left system is causing the sustainability problem and how the right system can solve it. Because of high reuse of proven mechanisms, the solution on the right should achieve the same high quality results we have long enjoyed from the solution on the left. We are essentially reusing an old system rather than designing a new one from scratch.

This is a completely different way to look at the problem. While the world's *private property* has long been well managed, the same can't be said for its *common property*. What we have here is a property management problem.

That problem was solved long ago for private property by the system on the left. It took thousands of years for that system to evolve to maturity. But we can't wait that long for the system on the right. So why not accelerate its evolution by introducing enabling legislation for Common Property Rights?

Nature loves symmetry

## How It Works

Let's trace the total system's evolution. Node names are italicized. Feedback loops names are bolded blue.

Long ago in the hunter-gatherer mode, *technology* was very low. There was relatively low *use of private property*, such as crude hunting tools and shelters, as well as low *use of common property* in the form of the natural resources used for hunting and gathering. That stage lasted from about 200,000 to 10,000 years ago, when invention of agricultural *technology* changed the system abruptly.

The introduction of agriculture radically increased *use of private property*, *use of common property*, and the *size and capability of government*. More efficient food production allowed a ruling class to specialize in governance. This and greater use of private and common property increased *general property rights law* which greatly strengthened *Private Property Rights* and *Common Property Rights* custom and law. This increased the number and size of *for-profit corporations* and *non-profit stewards*. This in turn increased *private property claims and ownership*. It also increased *common property claims and stewardship*, like shared planting fields, stock grazing areas, and managed community water sources. But from the beginning the CPR system lagged behind development of the PPR system due to *environmental impact* delays and poor understanding of ecosystem behavior.

As *technology* grew, higher *use of private property* led beyond personal consumption to opportunities for profit. One could produce things and sell them for considerable amounts of personal gain. This led to *profit targets* for large farmers, master craftsmen, merchants, money changers, and so on. This in turn led to *monitoring of results*, which was used to adjust a producer's *sales via prices for goods and services* and their *purchases via expenses for provision of goods and services* in order to meet their *profit targets*.

At this point a complete PPR system existed, with one exception. The **managing agent**, the agent who makes the on-the-spot decisions on what should be sold, what prices should be, where purchases should go, etcetera, was still the individual person. They might have employed others, as in cottage industry, master craftsmen, or farm owners and laborers, but they acted as persons. If they died, moved, or failed to pass the business down, it usually disappeared.

As *technology* grew still further this changed. Businesses became larger. They began to be sold. Investors began to fund them. Century by century what became **the modern corporation** slowly emerged. The granting of guild and corporate charters, such the one to the East India Trading Company in 1600, marked the beginning of *corporate law*. This allowed *for-profit corporations* to appear routinely. Because corporations have much lower transaction costs than individuals and allow more specialization, this led to greatly increased *private property claims and ownership*. This caused the need for *commerce law* to allow conducting market transactions in a more orderly manner.

Like Private Property Rights, **Common Property Rights is efficient, generic, and self-replicating.** No other sustainability solution offers these qualities including regulations, pollution taxes, emissions trading, conservation, collective management, and privatization.

Strong and capable governments, plus the laws they provided and enforced, plus the spread of corporations, caused the *modern market system* to appear. This was an epic event. Price signals (rather than tradition, personal relationships, and barter) began driving system efficiency, causing a *massive increase in human population and quality of life*.

But this came at a hidden cost. The world's PPR system became far more efficient than its CPR system. The **Growth of Industrial Technology** loop raced ahead of the **Growth of Sustainable Technology** loop, throwing the total system off balance into a state of ominous unsustainability. The **Limits to Growth** loop was silently, usually after a delay, increasing *environmental impact*. This increases *production costs* which *lowers production rates*.

This brings us to where we are today. Due to an inefficient CPR system the **Growth of Sustainable Technology** and **Impact Reduction** loops are weak. As more and more effects of delayed *environmental impact* appear, production rates will fall. If business as usual continues, eventual environmental collapse will cause economic collapse.

**The collapse scenario can be avoided by resolving the economic root cause of the sustainability problem:** high transaction costs for managing common property sustainably. Once *Common Property Rights* is updated to allow *non-profit stewards*, a torrent of stewards will appear because their transaction costs are now super low. Just as corporations file claims for minerals, patents, and copyrights, **stewards** file claims for unclaimed common properties (like a polluted rive or an overused aquifer) whose wise stewardship would benefit the common good.

Once a claim is accepted, the government (with help from the steward, who has some expertise here) sets the *sustainability targets* for that common property, such as the ambient standard for a pollutant in a sink. If targets are not achieved a steward loses its claim.

Stewards are the managing agent, not the government. This avoids command-and-control, which has proven to be inefficient at large scale.

Stewards are authorized to charge **fees** for any activity that excessively degrades the health of their common property. Fees are charged at the most efficient places in the system. The fee type is whatever a steward feels works best: flat fees per unit of resource use, seasonally adjusted fees, tradable permits, permit auctions, etc. Fees must be charged in a non-discriminatory manner. Since the CPR system is so far behind the PPR system, special care will be needed for transition to minimize hardship. Once the health of a steward's common property meets its target, fees fall to a low level, just enough to pay for the costs of monitoring, administration, minor additional R&D, setting up new customers and closing out old ones, etc. This is the maintenance phase of stewardship.

Authority to charge fees leads to *sales via fees for use of ecosystem services*. Fee income goes to *purchases via buys for provision of sustainable ecosystem services*. **Buys** go to buying anything that will move the health of a common property into its targeted safe zone in time. Examples are administrative overhead, monitoring of ecosystem health, measurement of ecosystem service use rates, R&D, cost/share for implementation, education, and awareness campaigns.

Like prices and expenses, fees and buys are a powerful combination. Fees discourage harmful behavior. Buys buy things that will reduce future fees. By *monitoring of results* stewards can adjust the level of fees and where their buys go to meet their *sustainability targets*, just as corporations do with prices and expenses to meet *profit targets*. A well run stewardship will in the long run lower fees to the lowest level humanly possible—just as price curves for new technologies start out high and fall low. The net effect will be high **Growth of Sustainable Technology** and the required amount of **Impact Reduction**.

## The Four Key Requirements for a Successful Stewardship Startup

**A. A pocket of low change resistance, such as a county, city, or state.** – Otherwise the all-important enabling legislation will not be passed. The local legislature must be open to the idea of stewardship via Common Property Rights.

**B. An existing well established legal NGO to get the pilot enabling legislation passed and later the full non-generic legislation** – Examples are the Southern Environmental Law Center (SELC) and GreenLaw. Using SELC's phrasing, legal NGO's use "the Power of the Law" to get offenders to behave more sustainably.

**C. An existing well established environmental NGO who is already a *de facto* steward** – One example is Upper Chattahoochee Riverkeeper, whose "mission is to advocate and secure the protection and stewardship of the Chattahoochee River, its tributaries and watershed...." They're a member of the Waterkeeper Alliance, who has 200 *de facto* steward members.


**D. Expression of pain** – The legislature, legal NGO, and environmental NGO must all be strongly dissatisfied with progress on solving the sustainability problem. They must recognize that present approaches are not working or they will not be receptive to a solution as novel as Common Property Rights.

## How to Do a Stewardship Startup in Thirteen Easy Steps

1. Be skeptical. First satisfy yourself the Root Cause Analysis is sufficiently correct. Everything depends on this. Study how Common Property Rights resolves the root cause of why the economic system is improperly coupled to the environment.
2. Find a spot on the planet that satisfies the four key requirements.
3. Change resistance is the crux so focus on that. The real hurdle is getting the temporary non-generic enabling legislation passed. This applies only to the test steward for 5 or 10 years or so.
4. Explain to your elected representatives how Common Property Rights works. Show them how it's a better mousetrap. Explain how it can fully solve the sustainability problem and other solutions cannot. You'd like to run an experiment. There's little to lose and a lot to gain.
5. Get the temporary enabling legislation passed.
6. Incorporate a stewardship corporation, file a claim, and get it accepted.
7. Get stewardship of your common property running smoothly. This will take a few years.
8. As you go, collect the data demonstrating how well Common Property Rights can or can't work. Improve the mechanism of Common Property Rights as you go.
9. If things go well, use experimental results to get the temporary non-generic enabling legislation upgraded to permanent generic legislation. The first time this happens will be the actual birth of Common Property Rights as a comprehensive solution. This would be a historic occasion worth celebrating.
10. That political unit is now open for claims. Dozens to hundreds of *de facto* stewards will incorporate as real stewards and start filing claims.
11. Those stewards will spread the solution to other political units because that helps them better achieve their goal.
12. More and more enabling legislation will be passed. Mongolian hordes of stewards will materialize as if out of nowhere, due to the pent up desires of hundreds of thousands of *de facto* stewards around the planet.
13. Due to claims, the generic nature of Common Property Rights, and its high efficiency the solution will self-replicate until there are enough stewards to solve the sustainability problem.

Everybody wants to be a good steward. Once the world has enough stewards the sustainability problem is solved.


Thwink.org is a small independent "thwink" tank founded in 2001. Our focus is analyzing how to solve the environmental sustainability problem as a whole using the most effective methods available. This line of attack has led to some novel and perhaps penetrating results. These consist of: (1) A formal problem solving process for applying Root Cause Analysis to the sustainability problem, (2) Our analysis findings, which are extensive, and (3) Our flagship solution element of Common Property Rights.