The Market State and the Liquidation of Biophysical Capital

The term *commons* was first used during the enclosure period in Britain when people were removed from their communal lands. Since then, commons have come to represent areas of co-governance and co-production that lie outside of the market and state sectors *(or Market State)*, including food, water, clean air, energy, information, internet, culture, indigenous peoples’ rights and other concerns. The recent failures of the Doha Round of world trade talks, the UN Conference on the global economic crisis and the Copenhagen Summit on climate change have brought the commons into sharper focus. Since these community-managed resources are a primary source of economic, social and creative value, could they provide a meta-level context for global negotiations? Commons have different meanings, of course, because we associate them with different levels of scale. At community and regional levels, the commons are largely a territorial concept involving the local appropriation, use and benefit of a particular property; at the global level, it’s more of a functional concept involving sovereign resource management rather than questions of use and benefit. But the increasing openness of political systems and interconnectivity of economies and information networks has created new possibilities for multi-level management of the commons, requiring principles and linkages that reach from the local levels of social and political organization to higher levels of multilateral governance.

This article focuses on why the international community has been unable to bring the full range of commons issues and their representatives into strategic discussions. It calls for a new framework of global interaction and dialogue based on natural law. To create this *metalogue on the global commons*, world society must engage in a kind of non-dualism—a recognition that the various beliefs, qualities, or practices which appear separate are actually part of the same phenomena. As on the individual level of consciousness and being where the ‘mind-body split’ is healed through introspection, *global non-polarity* will also require collective self-inquiry, dialogue and reconciliation on the ontological nature of world community. Ontology means being present. If global citizens, their representatives and institutions are sourcing the vast potentials of their mental, natural and physical commons, this would be a significant step toward global non-polarity.

Bringing these various issues and representatives together on a global scale—which has never been done—is one dimension. But even when major conferences are held on single issues, they tend to leave out the non-quantitative (i.e., undervalued) aspects of the commons, which represent the real dispersion of human power in the world. It isn’t that this intersubjectivity is entirely missing, but that it is still underrepresented and repressed in multilateral negotiations. As indicated in Figure 1, the *noosphere* (consciousness), expressed through the economic ideology of the Market State, has dissociated from the *biosphere* (life, nature, biology) and the *physiosphere* (physical matter). This imbalance did not emanate from the biophysical world, but in the human mind. In earlier times, value emerged from the biological resources, physical utilities and human labor of a community, and living close to these sources of life and sustenance created social trust, stability and cohesion. In recent centuries, as industrial civilization was forged...
by extracting and burning up these assets, biophysical value has gradually become a mental abstraction, a rational coefficient. Through the economic growth imperative which fuels the conversion of finite resources into money and commodities, the collective mind is repressing its own organic and material roots, decoupling the economy from its underlying sources of resilience and survival and creating countless side-effects that threaten human and animal life and the greater health of the planet.

How did this happen? It’s well known that the Scientific Revolution brought about a clear differentiation between biology and physics—a recognition that the physical world provides the basic conditions for the biological. It demonstrated that the organic realm is moving upward in evolution into greater differentiation, structural order and complexity, while many (though not all) components of the physical realm are gradually moving in the opposite direction, dissipating into chaos. The fact that life and matter are playing different evolutionary roles also provided a new basis for the social management of property. During the Middle Ages, the lands, resources and labor that were not part of the feudal system were shared by people through culture and custom. As ideology replaced theology during the 14th-17th centuries, divine hierarchies, kingly sovereignty, and feudal governance structures were displaced. Just as the biosphere and physisphere had been differentiated, it was also clear that the conscious agent making this separation was the noosphere: rational consciousness was differentiating itself from the biophysical. Critical thought, rationality, freedom and democracy began to define human life. The emerging ideas of economic and political individualism led political philosophers to conclude that, just as the mind ‘owns’ the body, a person has the right to own property. With this rationalist basis for contractual property, traditional rights to common property were overthrown.

Yet the intoxicating premise of the Market State—that the noosphere is not part of the biosphere—suppressed the fact that Earth functions as a living organism and that the biosphere is actually a vital part of the noosphere. This has created a profound contradiction. On one hand, the historic schism of biology and physics advanced the cause of scientific progress, industrial production, capital accumulation and national governance structures, and much of world civilization took a great leap forward. On the other hand, the conscious ideology of economic growth provided a rationale for the endless borrowing and massive appropriation of commons resources. The extraction and production of commodity and monetary value from the Earth and from social labor have effectively separated human consciousness, community and culture from nature and matter.

**History’s Legal Tautology: Res Nullius Vs. Res Communis**

A standard definition of the commons does not apply at all levels of social, political and economic organization. Many local commons are deeply embedded in their own cultural, historical, economic and political structures, while the global commons is still an evolving concept. As noted in Figure 2, local commons emphasize the ownership or management of a territory of goods—invoking the principles of exclusion (some persons may be prevented from using a good); non-exclusion (no one can be prevented from using a good); rivalness (the use of a good by one person reduces its use for others); and non-rivalness (the use of a good by one person does not affect its use by others).

Global commons emphasize the functional use of resources beyond national borders where local principles have less significance because of the state-centric international laws governing the various resource domains across borders. Given these different assumptions, multi-governance and institutional linkages for the commons do not yet scale up (or down) from the community to the regional and international levels.

Historically, the legal basis for the global commons—in public trust doctrine, public domain, human rights, national constitutions, and international treaties, protocols and conventions—has been circumscribed by the liberal constraints of state sovereignty, which emphasize the management of a territory and the consent of the governed within it. Hence, through the consent-based international law of sovereign nations, all claims on the commons, whether inside or outside of state borders, must be approved by each state as a nominal member of the larger community of states. But this is problematic. Whether inside or outside of state borders, if people derive their rights to a commons from natural law and view government as an interloper—a fictitious entity holding property which is entrusted to humanity—then these liberal legal claims may be challenged.

The historical rights to local commons have their basis in customary law. Prior to the Market State, property use was heavily influenced by custom and culture, and in many communities, established norms of behavior, rights or responsibilities acquired the force of law. Customary law is sometimes confused with public domain law. While customary law emphasizes the social and cultural limitations of commons management, public domain is focused more on the unrestricted use of public goods through civil law. Public domain had its origins in the ancient Roman concepts of *res nullius* and *res communis*. *Res nullius* refers to things that have not been made into property and have no owner—for example, untamed animals and abandoned lands. *Res communis*, on the
other hand, refers to *things that are common to everyone*, though they may be in a wild, unappropriated state, like forests and oceans. There is a significant difference between the two principles. Under *res nullius*, common goods cannot be owned by anyone. Under *res communis*, ‘ownership by everyone’ is based, not on community, but on the self-interest of each member of the community, which means that ownership of ‘common property’ may be licensed to a private individual or group.

The voyages of Columbus, Magellan and other explorers demonstrated the apparently limitless expanse of the world and its inexhaustible resources. As global sea trade escalated in the early 17th century, the Netherlands became involved in a shipping dispute—but there were no legal precedents pertaining to international waters. The concept of the *infinite extent of nature* entered the modern legal canon through the work of Dutch jurist Hugo Grotius. Rather than use the customary laws of land and community, based on social obligations between commoners and landlords, Grotius developed his doctrine of unrestricted open access to the high seas especially for government and commercial representatives involved in extraterritorial relations. In his 1609 book, *The Free Sea*, Grotius argued that because the seas belong to no one and are ungovernable, they can be claimed as an area of open access for everyone. Since the world beyond national territories was infinite and unaccountable (*res nullius*), he reasoned, then these new areas were open to public management (*res communis*).

Grotius’s proposals were reinterpreted through the Peace of Westphalia in 1648, when the structure of the nation-state was formally adopted. The rising nations of Europe had already been using *res nullius* and *res communus* selectively. They invoked *res nullius* within their foreign colonies through the principle of *terra nullius*, or land belonging to no one. This doctrine gave sovereign nations a legal justification to ignore the traditional claims of those who inhabited non-sovereign territories. Denied their natural rights, indigenous peoples were driven off their lands by foreigners determined to exploit their labor and resources for trade. International law thus allowed modern states to circumvent the customary laws of local commons and pursue their expansionary interests through wars, colonization, slavery and the unequal distribution of commons resources.

Meanwhile, beyond their colonial boundaries, the new European states employed an extended version of Grotius’s principle of *res communis* in international relations—the doctrine that the *public property of all humanity* could be guaranteed only through the sovereignty of nations which were loosely affiliated on the basis of recognizing one another’s sovereignty. *Res communis* thus created a weak world order which precluded neighborly responsibilities of solidarity and cooperation with other states through the strong ‘individualism’ of national sovereignty—the self-interest of each state in guaranteeing nonexclusive use and open access to the commons. Today, under this liberal doctrine, resource areas that are shared by several nations through international treaty (such as the Mediterranean Sea and Antarctica) are considered *international commons*, while resource areas which are open to all nations (oceans, seabeds, atmosphere) are considered *global commons*. By assuring everyone the unrestricted access to areas that fall outside of national jurisdictions, state officials can claim that ‘the commons belong to everyone’ through public domain and open access. To the modern ear, the concepts ‘public’ and ‘open’ have a ring of democratic inclusiveness, but this is a hollow promise: resource areas such as world fisheries, the atmosphere and outer space are heavily restricted through sovereign treaties and conventions. Hence, collective decision-making, which is frequently based in natural or customary law on the local commons, rests entirely upon consent-based, sovereign law at the global level. As long as the customary principles of exclusion, non-exclusion, rivalness and non-rivalness are superseded by the modern right of sovereign states to manage the commons beyond national borders, broadly shared governance and equal access to the global commons are not realizable. This neglect of effective global commons management has resulted in many international imbalances.

**Today’s Superbubble: Surplus Vs. Deficit Nations**

From the time of Grotius through the Second World War, nations continued to view the global commons as *res communis* through international liberal law. During the post-war period, many colonial nations achieved political independence from their ruling countries, yet still found themselves reliant on the world’s rich nations for economic assistance. The 1944 Bretton Woods conference promised a multilateral system in which foreign assistance and loans would flow from rich to poor nations, and all would adjust their payments balances for mutual benefit. But there was a flaw in the Bretton Woods framework: different structural incentives for nations with current account *deficits* and *surpluses* (deficit or surplus in a current account measures a nation’s income relative to its spending and indicates whether it is mostly saving or borrowing from abroad). Under the terms of the Bretton Woods agreement, the International Monetary Fund has legal powers to ensure that deficit nations adjust their fiscal balances and pay their debts, but there is no reciprocal mechanism requiring surplus nations to make adjustments and recycle their trade surpluses and currency reserves. (The exception is the United States, which is a deficit nation but is not immediately forced to adjust its fiscal balances because of its reserve currency.)

Two mutually dependent models of economic development and growth have resulted. There is the model of export growth, over-saving and under-consumption in many Asian nations like China and Japan, as well as Germany and the petrodollar states; and the model of cheap imports, low-cost foreign loans, and debt-financed consumption in nations like the United States and the United Kingdom. Essentially, surplus nations are encouraged to build up savings of foreign reserves and withdraw these export earnings from circulation, leaving potential purchasing power idle rather than using it to buy the products of nations with trade deficits. Because the IMF is unable to link global capacity with global demand, the global economy must depend on deficit nations to sustain their global demand for the surplus output of the rest of the world.
With no way of stabilizing the world’s widening trade imbalances, distorted growth and misaligned exchange rates, a monetary 
**superbubble** has developed between surplus and deficit nations.

Can this imbalance be reconciled? A far-reaching proposal was put forward by John Maynard Keynes in 1941. He suggested a **negative interest rate** on international trade and exchange which would automatically increase the circulation of money for lending and investment. Creditors would be required to pay interest periodically on their holdings of surplus international currency in the same way that debtors pay interest on their loans. Thus, each nation would be obliged annually to clear its accounts and maintain a neutral balance, preventing the accumulation of surpluses or deficits. Unfortunately, Keynes’ proposal would not adjust today’s superbubble. Negative interest rates used to balance interest rates may eliminate compound growth, debt and inflation, and increase the velocity of money, but this in itself would not realign market prices with the underlying value of social and ecological goods and services. As long as the locus of demand is still measured in market prices rather than in the intrinsic value of social labor, income, wages, purchasing power, and natural and physical resources, the current patterns of overproduction and overconsumption and the competitive pressures on the Earth, its ecosystems, human labor and social creativity will continue. It’s not the utility value or demand for goods and services that is key in ensuring stable currency value. What is crucial is the **preservation value** which underlies that demand, not as a capital asset or commodity-based currency, but as an intrinsic store of wealth that resists devaluation.

What Keynes was probably envisioning was a commons of global financial liquidity in which inflow and outflow are in balance, creating a state of dynamic equilibrium. It is useful, therefore, to consider the international financial adjustment process through system dynamics, in which dynamic behavior arises when a **flow** accumulates in a **stock** and is later recycled as a flow. (This meaning of stock is not the same as the capital account of a business security.) In system dynamics, stock is a quantity of something that exists at a single point in time, as opposed to a flow which is measured over a period of time. To use a familiar example: a bathtub accumulates a stock of water, while the activity in its faucet and drainpipe represent flows into and out of the tub. The stock increases if the inflow is greater than the outflow; and the stock decreases when the outflow is greater than the inflow. In terms of current accounts, surpluses are like stocks, and deficits are like flows (this is a generalization, since surplus and deficit each has its own forms of accumulation, inflows and outflows, but it is a fair illustration of the broad pattern of balance-of-payments among nations). The point is that stocks are not bound by time, while flows are time-dependent. This makes stocks persistent and inert: stopping the inflow to a stock means that the stock will stay at the same level unless the outflow increases. These dynamics are present in the superbubble created by the Bretton Woods system, where the time variables for stocks and flows differ significantly (Figure 3).

Market forces do not adjust the structural distortions between current accounts, because stocks (trade and capital surpluses), inflows (trade, finance, debt payments) and outflows (trade, finance, aid, loans) vary widely, creating timelags in the liquidity of money and exchange of goods and services. Instability in the global financial system is the result of a structural flaw in which the intrinsic value of commons resources are measured only through effective demand when it is registered in the marketplace—even though the time-bound flows of that demand may be widely disconnected from the recurrent stocks of supply. A major international adjustment is needed to clear the superbubble that has resulted from these different timeframes and incentives in the balance-of-payment system which allows surplus nations to accumulate financial assets without recycling them, while requiring deficit nations to pay their debts and reconcile their fiscal balances. This adjustment between the stocks and flows of the world’s national current accounts must be accomplished by counterposing the interest rate with a long-term mechanism for sustainability, not with a negative interest rate.

**Tomorrow’s Great Adjustment: Renewable Vs. Depletable Resources**

Since the 18th century, economists have argued that vesting power in the individual through property ownership helps prevent aggressive market forces from resulting in excessive exploitation and inefficient production of scarce resources. This may have been a useful strategy during the past few centuries when market products were relatively scarce and natural resources were relatively abundant. But now, it’s the reverse: goods and services produced by nature have become scarcer and more valuable, while goods and services produced by people have become more plentiful and less valuable. Yet we still have the same system for managing scarcity and generating profits as in former times, using the same **two principles for adding value to commons resources**. First, the market takes renewable resources like information, ideas, languages, codes and music, which are not limited as a raw input of production and may not generate an adequate price because of their abundance, and **makes them artificially scarce** through restrictive property regimes like patents, trademarks and copyrights. The rationale is that innovation, financial development and public wealth will be generated by exclusionary property rights and
scarcity—even through proprietary claims on renewable resources result in massive inefficiencies by suppressing innovation, creativity, productivity, access, culture and civic life. Second, economic production requires a steady chain of material and natural resources, which are components of the underlying physical materials and ecosystems that support life. To extract their value, the economy treats these depletable resources, which are limited as a raw input of production, as though they are essentially limitless by holding commodity prices artificially low to increase the rate of consumption. Yet the input of raw materials from the environment and the output of wastes from the economy undermine the resilience and diversity of the very physical resources, life-forms and ecosystems upon which the economy depends for the reproduction of capital. This misalignment in the market incentives of renewable and depletable resources has created deep discrepancies between the interests of private capital accumulation and natural preservation and social production. This is reflected in the superbubble behind:

- the stocks and flows of economic products
- the stocks and flows in the current accounts of nations that produce, trade and finance these products
- the stocks and flows of labor, material resources and ecosystems from which these goods are extracted and produced

Since ecological and social production are both necessary for human livelihood, well-being and survival, the intrinsic value of the commons transcends the imputed value expressed through the constraints of private property, state sovereignty and traditional economic measures. It is the task of international negotiators to treat renewable and depletable resources as part of this broader environmental and economic continuum. Global discussions on climate change are already using the language of stocks and flows. On one side, the flows of current carbon dioxide emissions are frequently emphasized by industrialized nations. Various mechanisms have been discussed to reduce these flows, including legal penalties on present flow liabilities, which could generate funds for a global financial pool to address the problems of climate change. On the other side, the historic legacy of carbon dioxide emissions—from colonialism to industrial pollution—is generally regarded as a stock issue by non- or newly-industrializing countries. In this view, the stock of greenhouse gases in the atmosphere was created over the past two centuries and the damage is already done. These nations claim the right to follow the same path toward industrialization as others before them, while being compensated for the previous buildup of carbon stock. Proposals to adjust the stock of past damage in the name of social and ecological justice include development, aid, investment, global stimulus, climate wealth funds and reparations.

From the broader perspectives of intergenerational and inter-species justice, such measures fall short because there is no reciprocal mechanism for enforcing a dynamic equilibrium between ecological and material stocks and their inflows and outflows. Negotiators cannot reconcile these structural imbalances because present market measures are not adequate in aligning international carbon credits and deficits with the broader global inflows and outflows of greenhouse gases. Proprietary ownership, market pricing, interest rates, climate bonds, carbon credits and sovereign regulations do not create transformational incentives commensurate with the scope of the problem and cannot clear the superbubble resulting from the different objectives and timeframes between the financial and credit exchanges of nations and the realities of the planet’s entropic debt. Even if we were to slow the flow of greenhouse gases into the atmosphere, for example, this would not reduce the stock that is already there—yet this has not been factored into state-to-state negotiations or market incentive schemes. When the international system is finally adjusted, it must link the stocks and flows in the current accounts between surplus and deficit nations with the stocks and flows of the global commons, including both renewable and depletable resources. This opens new vistas for global negotiations.

Planetary Non-Dualism: From North-South Dialogue to Transborder Metologue

Since the late 1960s, various claims have been made on the common heritage of humanity. These include: seabeds (beyond coastal jurisdictions), Antarctica, the moon, satellite orbits, space communications, solar energy, endangered species, genetic resources, rain forests, atmosphere, food, ocean resources, cultural legacies, technology and commodities. The North-South dialogue on these transboundary domains was a matter of much interest during the 1970s, but has now been precluded by other factors. Although the common heritage concept originated in the global South, Northern nations have used it to their advantage, defining the commons in the Grottian tradition—a space of liberal freedom under multi-sovereign authority. Public domain and open access have thus been on the agenda of corporations and financial institutions seeking to exploit natural resources, and governments seeking to attain greater political leverage over other governments holding resources. Through the political cartel of the G8, and now the G20 (which is seen by some as broadening the world’s decision-making to include the interests of developing nations), common heritage has been folded into the normative interests of the world’s richer corporations, banks and states.

After the Second World War, the assertion of national rights to throw off the shackles of colonialism led many developing nations to insist on self-determination in the protection of their own resources. Until the 1980s, permanent sovereignty over natural resources was linked with a strong commitment to human and social development, global wealth redistribution and a new international economic order. Once the Cold War ended and the pace of globalization speeded up, however, virtually all nations in Latin America, Asia, Africa, the Middle East, and Eastern Europe gravitated toward the global marketplace, not only for trade and finance, but as a primary means of fighting poverty and promoting development. Thus, for the past two decades, developed and developing nations have been acting similarly in consolidating the permanent sovereignty
of their domestic commons, as well as the prohibitory management of commons beyond their borders. Essentially, a new club of major governments, from North and South, is using consent-based sources of liberal international law (treaties and customary international law) to manage a restrictive global property regime of sovereign neutrality and open access, which amounts to exclusive and non-sustainable use of the global commons. Because national priorities, stemming from the sovereign right to development, determine whether natural resources may be conserved, exploited or destroyed, the global commons is left without effective measures for governance, enforcement or development.

Although civil society and social movements in many nations have been vocal about protecting world resources and the rights of the poor to development, they are mostly excluded from strategic multilateral negotiations, where the dialogue is less about allocation, use and benefit of the global commons for the common good than about the politics of international business and national security. Since the field of international development has acquired the baggage of transnational capitalism and state sovereignty, including structures of global social hierarchy, division of labor, and public-private partnerships, it is important that the kinds of development associated with the commons are clearly differentiated. Among the defenders of the commons, there is a tendency for one side to emphasize social and economic advancement, human development and creative potential, and the other to stress nature, preservation and limits to economic development. Although social production, justice and human rights may seem divergent from sustainability, conservation and the environment, in most cases they are complementary. An example is the digital technology that helps people in poor nations to manage their natural and physical commons through information, coordination, and economic and social innovation. Hence, the real issue is not the apparent dissimilarities between ecology, culture and society. The world’s greatest discrepancy is between the commons and the Market State: because ecological and social production create natural wealth, ecosystems services and social cohesion—not dead commodities, unnecessary services and social disparities.

Since the collapse of the North-South dialogue, the meaning of ‘development’ has changed. Many developed nations are now in deficit and many developing nations are in surplus. The new political dichotomies are not always easy to pinpoint. Sometimes the polarized viewpoints still line up at international conferences as divisions between rich-poor and surplus-deficit nations. Because of the mounting biophysical debt of many surplus nations, deficit nations are questioning the legitimacy of the world’s unfair balance-of-payments adjustment system. As settlement, some developing states have been seeking a ‘Global Deal’ to provide financial and technical assistance for development, carbon emission reductions and other environmental safeguards. But compensation for developing nations is only an interim solution. Many bargainers now recognize that major biological and physical damage to the planetary environment has occurred and that all nations are running an entropic debt. So the strategic interests that are lining up at today’s global gatherings are primarily representing different sovereign and commercial positions on the stocks and flows of renewable and depletable resources. Unfortunately, this new positionality simply shifts the focus in international discussions from whether nations have surpluses or deficits to whether nations have access to a greater balance of renewables (scientific knowledge, cultural heritage, ideas, knowledge and social relationships) or depletables (ocean fisheries, soil, hydrcarbons, water and minerals). These politics do not serve the interests of poverty reduction, sustainable development or alleviation of the planet’s biophysical debt.

The North-South dialogue ended when global policy issues became more diffuse through increasing economic integration and the softening of national boundaries. Negotiations on world resources are no longer a dialogue about development issues among geographical blocs but a metaleague on cross-border problems affecting all states. Competition and comparative advantage between nations must now be refocused by expanding global discussions—making them broadly representative, cross-sectoral and interdisciplinary—to integrate the domains of global development, aid, environment, trade, finance, monetary policy, energy, climate change, human security and political security. International negotiators have an obligation to include all of these issues in the larger context of the stocks and flows of commons resources. To correct the world’s burgeoning superbubble and transform the economy into a component part of the environment, the withdrawal rates of depletable resources must be slowed to allow stocks to catch up with flows, and the withdrawal rates of renewable resources equilibrated with their replenishment rates. Such adjustments would have huge significance. Integrating the stocks and flows of the economy with the stocks and flows of the environment will automatically infuse the customary principles of exclusion, non-exclusion, rivalness and non-rivalness into planetary decision-making, bringing the local and global commons fully into scale.

Beyond the Pairs of Opposites: Commons Sovereignty as Global Natural Law

The laws which govern today’s international system evolved during a period when global economic and ecological interdependence was not a major factor. Our legal framework for the political and economic management of common property originated in Roman times when the entire planet held less than 300 million people; and these principles were further elaborated at the international level by Grotius when world population was around 550 million and the lands and seas of Earth were still being charted and seemed infinite in extension. The idea of imposing measures of economic growth and order on empty, limitless space may have seemed logical when the globe was much less crowded and resources more abundant. But this seems folly now that nearly 7 billion people are competing for the planet’s resources. Since global integration has become the driving force in civilization, our beliefs in capital value, private property, sovereignty over resources, comparative advantage in trade, and energy independence must
undergo extensive reconsideration, not unlike the time of Grotius, when the era of feudal society passed, the national state was created and international law was developed.

The ideology of the Market State holds that private property and the right to exclude others is the best way to prevent finite resources from being depleted or destroyed, yet legal history shows that property management is also a form of entrustment which entails the right of access to goods held in common. To protect its commons, human society must transform the state-centric legal system of absolute sovereignty and ownership. It’s time to revisit *res nullius* in its pure form. If the world belongs to no one, as *res nullius* claims, then we are not its owners but its trustees. On this basis, humanity would hold the global commons in trust through a new framework of cooperation and agreement based on natural law, customary law and public trust doctrine, and all states would be under peremptory obligation to honor the governance principles of exclusion, non-exclusion, rivalry and non-rivalry. Non-polarity in the ecological and material allocation, use and benefit of common goods would thus resolve the surplus imbalances and cynical claims of *res communis*—the doctrine of international ‘public’ domain and ‘open’ access to the property of all humanity (which therefore needs to be managed and allocated by a few on behalf of the rest).

Internalizing the value of the commons through individual and collective accountability to the whole system of Earth will require institutional procedures and rules aligned with dynamic systems theory and evolutionary systems theory. Managing these variables across time and scale—community, regional and international—requires objectives and principles of value which apply at each level while expressing the pattern of a larger holarchy. A purposeful monetary design is needed to harmonize the divergent components of the commons, integrating the economy as a subsystem of the finite biospheric commons, with its inflows of raw materials and outflows of wastes. To make this adjustment both at the level of the algorithms of financing and debt, and at the level of stabilizing the stocks and flows of finite biological and material resources and renewable resources, the international community could create a *sustainability rate* entirely independent of market goods and services (as introduced in “People Sharing Resources”, *Kosmos*, fall/winter 2009). While the interest rate could continue to function in linear time for limited-term objectives (Figure 4), the sustainability rate would reflect longer-range variables, such as the alleviation of poverty, preservation of resources, elimination of climate change and pollution, maintenance of social production, production of new ideas and knowledge, reproducibility of biophysical goods and other measures of human well-being and social quality of life. With the global commons as its reserve, the value expressed through the sustainability rate in every exchange of goods and services would be secured by the resilience and diversity of the world’s social, cultural, intellectual, natural, genetic, material and solar resources.

Today’s global superbubble is the result of deep structural imbalances between economic ideology and policy (noosphere), and environment and labor (biosphere) and physical resources (physiosphere). The challenge is to assemble international representatives from all regions and sectors to discuss global commons issues in a negotiating format which integrates these three streams of evolution. The settlement of national current accounts with the world’s biophysical imbalances requires a new monetary framework based on an understanding that the noosphere is a subsidiary of the biosphere. This can come about only through the cooperation of people acting, not as national or corporate representatives, but as representatives of present and future generations and species, so that competition becomes a strategy of collective, rather than individual, survival. When *commons sovereignty* is vested in humanity and life, and self-interest and common interest become part of the same holarchy of being, the dichotomies between capitalism and socialism—as well as developed and developing nations—will dissolve. Nothing will change, yet everything will change. Proponents of the free market may still assert that we all share consciousness through the price system. Environmentalists may still maintain that we all share life, and proponents of social labor may still say that we all share matter. Trustees of the global commons will say that we all share minds, life and matter, and therefore, no one may own the Earth.

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