

The Recreation of the Commons: Global Agriculture & Environment

The future of air, water, health, topsoil, biodiversity, clean energy, and soil, based on design principles, use of all that is locally available, moves, recycles, senses, and shares.



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Introduction — Philosophical Thought of “Blue Economy”

When I presented in April 2009 the core concepts and findings on local economic development as a possible report to the Club of Rome under the title “The Blue Economy: 100 innovations, 10 years, 100 million jobs”, I sketched out a vision. This vision was based on a clear understanding that nature in general and a wide range of ecosystems in particular have overcome nearly every imaginable challenge over the past millions of years, and therefore provide an inspiration for how we as a society can chart a pathway towards the future. We can build on the ingenuity of ecosystems that provide the wealth of products and services on which life depends, and then strengthen the social systems that build up culture, tradition, and social capital. This approach provides resilience in times of adversity and joy during the better moments of our lives. It also permits us to learn how to live within obvious limits while evolving from scarcity to abundance.

Observing ecological and social systems for decades can guide our quest towards a world where nature regains its evolutionary path and society strengthens its social web, enhancing the quality of life of all by empowering everyone to know how to respond to their basic needs with what is locally available. This challenge has become even more relevant considering the need to feed nearly 8 billion people. The past six years have taught me many lessons. How could we achieve a fast transition from traditional business and economic development, based on the logic of globalization and the drive to cut costs by enterprises searching for ever higher economies of scale, to a Blue Economy in rural zones that would perform better and transform industries faster than often has been considered viable?

These past six years have permitted me to better understand the fundamental shortcomings of the existing economic model, where practice differs greatly from theory, and where a simple focus on a core business based on a core competence has blinded many to seeing the wide portfolio of opportunities that we could pursue. The management of companies with their short-term objectives, translated into financial terms void of social and environmental considerations, considers the commons a place to exploit (as we do with excessive consumption of water) or a place to release our

excesses (as we do with the release of greenhouse gases into the atmosphere). How can we believe in the “invisible hand” where self-interest faced with scarcity is bound to lead to destructive behavior?

The logic of enlightened self-interest whereby “an individual who intends only to improve his own gain, is, as it were, led by an invisible hand to promote the public interest” (Adam Smith, 1776) has been too easily explained through the price fluctuations determined by the supply and demand of commercial goods and services. A high demand with constant supply leads to a higher price, which will allocate resources to the most efficient operator. True, if there is a well-functioning market with transparency to all players. However, this enlightened self-interest turns into destructive behavior when it is deployed in the realm of *the commons*, as we call the services and systems that are supplied freely by nature and which have — to date — no commercial value. The commons include biodiversity, the continuous provision of drinking water, the supply of oxygen in the air, the availability of grazing land for herds, the evolutionary and symbiotic path of biodiversity, the cycling of nutrients, the build-up of topsoil, and so much more that is indispensable if we wish to feed the world.

Ecosystem Services, or the Commons

Whereas a few economists have made an effort to calculate the value of all these factors, business and society have embraced the commons to be privatized for commercial exploitation by a few through an exclusive license to operate, as we have done with the permission to bottle water and sell it, thus depriving ecosystems of water through depletion of water tables. The commons have also been exploited through a selfish approach that undermines the very premises that guarantee the conditions of life. The critique against the invisible hand — which Adam Smith never meant to be something that would always function — was already successfully argued in the nineteenth century, but was conveniently omitted from any further economic teachings.

Modern society has believed in the freedom to exploit the commons, and has offered companies a license to act accordingly. We have confused the “free market” with the free exploitation of the commons. Now we realize that there is not only over-grazing, but

this “freedom to add extra sheep to graze on public land” leads to soil erosion, loss of water retention, and desertification. Thus, the freedom to pursue one’s own interests leads to the destruction of the very basis of the ecosystem that supports life. This *laissez-faire* approach that has been applied to the market is unknowingly applied to the commons as well. This reality is widely recognized for ecosystems, but few have noted that the commons in cities suffer even more, because space is so limited, the air is so dense, and the water is so scarce.

The decisions of the herdsmen are also taken by fishermen, by miners pursuing gold, by petro-chemists exploiting more fossil fuels turned into plastics, by polluters who use water or air to carry away their toxic waste or particles, and by the individuals and institutions that pursue this blind goal of “more for me”. This attitude of “me” brings ruin to everyone from irreversible climate change, as well as dramatically changing health (with respiratory diseases topping the list), the accumulation of toxic waste in dams built by mines, the depletion of topsoil, and the permanent loss of biodiversity — all of which makes it impossible to live a quality life in the cities. This mistreatment of the commons by the pursuit of “more for me” goes hand in hand with a permanent display of our free market’s incapacity to respond to the basic needs of all living on Earth. It is no surprise that poverty is rampant and few can survive with the income generated with agriculture. We are continuously undermining the ecosystem services that make life on Earth viable. Who has access to free fruit in the center of town?

This leads to the obvious question: Can we still build on a market system and apply capitalist principles while ensuring a better quality of life for everyone living on Earth? Or does the present system predestine societies in which 1% of the population can accumulate as much wealth as is owned by the other 99%? It is clear that the market which considers the commons as a free-for-all leads to recognition that we go (and have gone) beyond the limits, and that the benefits have gone to very few individuals. Thus, there is a need to curtail the freedom to operate as a business with limited liabilities. Now, if there are millions of operators in the market and the exploitation of the commons could be regulated, could we then steer business and society towards sustainability? If power is concentrated in the hands of a few super-corporations and super-rich people who pay no taxes anywhere, how does anyone value the chances of 200+ governments to guide the process of redesigning

the business model? We know that the opposite will be true: those few global operators will tell governments what to do. Within this context, how can we ever expect that the commons on which the very life of all depends will prevail?

This question inspires me to search for better solutions, driven by a new generation of entrepreneurs who rethink our management models.

The principles that guide management today — like supply chain management, outsourcing, and core business — are not only out of date but are outright destructive, and yet management does not realize it. These concepts are a perfect copy of the herdsmen’s decision to overgraze without ever feeling responsible. These management concepts, widely taught at all business schools around the world, culminate in the most commercial and profitable diploma ever sold: the MBA. How can we pretend to have efficient management when it depletes the commons beyond repair, and when of our limited natural resources, only 10% of all material processed is allotted any value, and 90% ends up as waste? In this oversimplified approach to production and sales, cost cutting and controls determine everything, and day-to-day operations are run by the desire to offer ever cheaper products without considering the full impact on people’s lives. How will managers ever face the absurdity of shipping butter and milk around the globe to bake cookies, which are then also shipped around the world?

Once we embrace nature as our inspiration, we transform our perception of the realities around us. This includes revising logic to rely on solutions derived from chemistry (designing new molecules) and biology (designing new forms of life) to a better understanding of the laws of physics and how geometry determines almost everything in life; transforming the logic of this linear cause-and-effect into a nonlinear complex reality; searching for an optimum for a whole system, rather than maximizing the result of one parameter; setting the goal of strengthening the resilience of society and the economy by promoting more diversity; and finally going beyond organics as a standard. These insights, all inspired by natural systems, offer a first set of principles that allow us to achieve results that traditional logic and management cannot even imagine. The key is to evolve from these general reflections and this philosophy to taking action on the ground in the city. It should all start with farming and a new logic applied to agriculture and nutrient cycling. While we have implemented more than 200 projects, and mobilized \$5 billion

for these initiatives, creating 3 million jobs, we may wish to focus on just one example to clarify how we can design an economy able to manage waste, generate nutrients, and change the livelihoods of citizens and farmers alike.

The From-the-Bottom-Up Project

The From-the-Bottom-Up Project empowers us to redesign a city by creating a remarkable fruit belt surrounding an urban environment, providing — within a single generation — millions of tons of a rich variety of highly nutritious, seasonal fruit, adding to the biodiversity of the region. The supplies of fruit, berries, and nuts will be rolled out with planting and harvesting in tune with the cycles of nature. This will attract more bees and more birds, and offer more joy. At the same time, this project will allow for the creation of a spirit of community in an urban context seldom seen in modern history: everyone in the area will get to know each other, and will know the names of every baby who is contributing in their area. Can you imagine what it means when a baby hears its name pronounced by 50 couples that meet regularly around a productive initiative?

This may seem like a vast undertaking. However, the start is very simple. The process requires a business model that has all the elements needed to redesign a city over time — starting with the creation of a community. This will require a fresh look at the reality of both the problems and the needs of citizens. The ecosystem allows for the design of an initiative that is so effective and efficient that diapers — yes, this modern expression of comfort and massive pollution — can be offered for free. We envision this project for a minimum of 1,000 babies in any city. The impact is beyond imagination. This kind of initiative, described below, will generate jobs while money is created by the sale and planting of trees on land provided by citizens and by the city. How is this *überhaupt* possible (how could this ever be possible)?

Cooperatives at the Core

We envision that at the core of this positive yet radical transformation lies a small nucleus of citizens, consisting of no more than 100 families. Mapping software has indicated that in vibrant cities, in every circle 800 to 1,000 meters in diameter, there will be approximately 100 babies with parents ready to work together for the

comfort of their offspring. This measuring process can be repeated hundreds — and in a megalopolis even thousands — of times. We create the network of the networks based on babies and their families. Parents and grandparents who participate in the “Free Diaper Initiative” agree to pick up their free supply of four ingredients: a mix of bamboo dust (outstanding moisture absorption), bamboo charcoal (excellent for skin care), and coffee grounds (proven odor absorption), and a double film of biodegradable plastics (made from non-food vegetable raw materials). And key to the initiative is that the parents also agree to drop off used diapers at a central point every Saturday. Parents are also encouraged to bring organic kitchen waste in biodegradable plastic bags, as both materials are needed to convert these natural resources into black earth, also known as *terra preta* — the secret of highly productive farming by the Incas and the Vikings. Each of the families will have at home a “diaper waffle machine” which basically produces diapers in the same way that waffles are made: after the four ingredients are mixed together, the warm waffle iron is used to seal and shape the diapers.

Parents are encouraged to change diapers as often as is needed, and not to wait an extra hour to save on diapers. Yes, parents will be encouraged to get up for diaper changes frequently at night, according to their baby’s feeding and weaning cycle, to ensure their baby has a bottom that is clean and dry but without reliance on the super-absorbent diapers that only wither and hardly degrade. In this way, the risk of an infant getting a urinary infection, which is painful and may even lead to infertility, is minimized.

Commit to Planting 1,000 Trees

There is no cost for the new diapers that families receive when they return the soiled ones. All that is required is that every family commits to selling and planting 1,000 fruit trees every year. Everyone receives the necessary training to do so. The total mass generated and the amount of black earth produced in a year (from the combination of diaper, human waste, and biomass waste) amounts to an astounding one ton per baby. This will provide enough carbon-rich soil to plant 1,000 fruit trees. Thus, in summary: each baby produces enough organic waste to provide the nutritious soil that offers a growth basis for 1,000 trees — each year!

During the trial phase in Berlin, families offered to pay for the

diapers even when not required to do so. We encourage people who want to pay to donate the money to the *100 Babies Cooperative* (or *The Fresh Fruit Generation*). These funds are not to be used for the project, but rather are allowed to accumulate to serve as a guarantee for investments in the future. On the basis of our pilot study, a cooperative of 100 families can accumulate approximately 1.2 million euro within 25 years ... and this amount of cash in the community is obtained only through voluntary contributions for the diapers.

From Scarcity to Abundance

All city officials we have approached are keen to contribute to the process. There are two reasons for this. In the first place, the project decreases the amount of diapers that end up in landfills (diapers currently form 5-6% of landfills), and secondly, the conversion of soiled diapers to black earth saves money, retains storm water, and produces an abundance of fruit.

The simple collection system used cuts down on transport costs, reducing the excessive load of trucks shipping diapers in and out of the urban zone, nearly all imported from overseas. Available land is used to grow large numbers of trees that will offer fruit for many decades, even for generations to come. If 1,000 families pursue these goals over 25 years, 25 million trees will be planted. If each tree offers on average 50 kilograms of fruit, the yield will be more than one million tons of fruit every year within a quarter of a century.

We have clearly shifted from scarcity to abundance. We have embraced a new era for the commons, where what is good and necessary is also free.

Partnership with the City

Now if this is the impact 1,000 babies and their families can have, imagine the impact 100,000 families can have if they undertake to produce fresh local fruit in a capital city with a million or more inhabitants. It now becomes obvious that cities need to incorporate this remarkable opportunity to include a fruit belt in their master plans.

Fruit growing on this scale is not new. The Prussian emperors had orchards of thousands of fruit trees planted around their Sanssouci palace in Potsdam on the outskirts of Berlin, including apples, pears, and plums. They even had greenhouses for growing oranges,

melons, and bananas. We are returning to that wisdom, one of securing healthy soil that will ensure abundance for decades to come.

The Network Economy

The responsibility for selling and planting fruit trees goes beyond only the parents. Mothers and fathers will mobilize their networks of friends and family, organizing tree planting days. They will make use of corporate sponsors, ones that are keen to contribute to a worthwhile cause. Service clubs like Rotary will gather the funds. We are transforming the city; we are creating abundance.

Who Are We?

We — the think tank of the Zero Emissions Research and Initiatives (ZERI) Network, which was created in 1994 in Japan at the United Nations University with the support of the Japanese government in preparation for the Kyoto Protocol, and the “do tank” known as the Foundation for the Blue Economy, which emerged after the publication of my report to the Club of Rome in 2009 under the same title, harvesting the insights and experience of 15 years of academic and field research — have learned that community can be created, and that sharing is possible.

We clearly see the radical transformation and the creation of an economy that embraces the commons, where the technologies may be patented but the business model is shared as an open source. In this economy, jobs are created in the city, and waste turns into one of the most precious sources of life: soil from which life regenerates more life, food, and indeed abundance. And while we are aware that this approach is disruptive for existing businesses — who may well react in traditional ways to this threat to do much better with what we have — we are convinced that there is no stopping the wisdom of the people and that there is no stopping the unleashing of entrepreneurship because, yes, we need to wake up the innovator within us, and know that we are the ones who make the decision. **JS**

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