

## Permitting Nature to pursue its Evolutionary Path

by Prof. Gunter Pauli

In 1984 I watched the horizon of the Orinoco basin in Colombia and listened to the proposal of Paolo Lugari to regenerate the rainforest that once stood before the Spanish destroyed the natural habitat to create a cattle farming industry. I heard my fellow visitors say “this is fantasy”. In 2009 I stood at the same place and watched the same horizon and saw the regenerated forest. Fantasy turned into reality. The number of plant species evolved over a quarter of a century from 17 (11 non-native) to 256. The impossible turned possible. We can regenerate biodiversity once lost, and we can put nature back on its evolutionary path provided we have the vision to constantly navigate between fantasy and reality. Even better - we can finance this.

### **Starting with a Monoculture**

At the early stages of development, Las Gaviotas was criticized for introducing a monoculture of pine trees. True, yet necessary. How could I ever imagine to become a promotor of the *Pinus caribea*? This tree in symbiosis with a mycorrhizal fungus *Psitolitus tinctorius*, proved to be highly resistant to heat and drought. While it grows it hardly has any biological function in the endeavor to convert the savannah into a thriving forest where top soil is generated and water turns into the commons. The precious shade of the naturally resistant tree inverted the temperature differential between rain and soil, and as soon as the ground was cooler than the rain the water percolates into the poor rocky cover and carried the debris that otherwise would have run-off with rainwater into the rivers.

Today, Las Gaviotas is a thriving community. Land of no value turned into land of value thus paving the way for a fresh look at evolution and development. Top soil is regenerated, counting already 15 centimeters and increasing. Biodiversity surpasses all expectations, and it only has just begun to regenerate. Eighty percent of the pine trees are removed to make space for other species which will turn into an even stronger engine of development. Since Las Gaviotas has proven that drinking water can be provided thanks to the regeneration of the forest as the commons, now this initiative brings health to the community, meeting basic needs for free, while achieving full employment. This process generates a peaceful environment, the most valuable in society. Now a platform emerges for social and economic development where the limits of natural resources are expanded thanks to a creative insight of human beings into the regenerative capacity of nature.

### **A better capital gain than Microsoft**

The economics of regenerating a forest are convincing. The land value increased over 25 years with factor 3,000, offering a better return than if someone had invested in Microsoft shares and would have held on for a quarter of a century. Knowing that we could match the performance of the most successful enterprise in modern history by planting trees regenerating ecosystems, we also understand that the debate needs to evolve from protecting nature to include regenerating ecosystems. When humanity understands the unintended consequences of its actions, and deliberately closes its eyes then we turn the problems into collateral damage, and display a double moral. However, when we recognize our shortcomings, then we can observe Nature as our inspiration to do better.

### **Inspired by Nature**

Nature is incapable of producing something no one desires. Nature counts no unemployed since everyone always contributes to the best of their abilities. Nature cascades nutrients, matter and energy, while it will carefully design out superfluous processes and systems thus making more available to an increasingly diverse community. Nature does not force trees to reattach the leaves lost in the autumn to the branches in the Spring. Everything is carefully upcycled - made into something better of higher value. The wealth of

biodiversity emerged after thousands of years of trial and error giving rise to a web of life that is composed of thousands of food and energy networks providing humanity a portfolio of commons, free services like water, top soil - indispensable to food - fresh air, soothing sounds, abundant matter and energy. Ecosystems have the capacity to evolve from scarcity to abundance thanks to embracing diversity. That is an inspiration for society.

It is within this context and hands-on experience that a better development model could emerge. While fascinated with learning from nature - we need to go beyond technologies, we urgently need business models where the most competitive enterprises are the most social and ecological. Whereas this is considered impossible by all the MBAs who have been trained to simplify everything into cash flow and core products based on a core competence, it is perfectly possible. Now we know that Gaviotas is not an isolated case, meeting all basic needs of the local population with what is available. There are at least one hundred additional examples where the good is cheap, and the indispensable is free, while the bad is expensive and the superfluous is eliminated.

This economic model is not against globalization, it is in favor of doing much better. And with approximately one third of all the young under 26 without a job, a billion going to bed hungry and 2 billion not having access to drinking water, it seems that there is room for massive improvement. It is exactly this need for improvement cannot permit the perfect to stand in the way of the better. But, it is clear that we need to change the rules of the game instead of improving the fringes. If a waste water treatment facility only does waste water, then we cannot expect much more than cleaner water and slurry at a high cost. If a landfill manager only does waste management, then we cannot expect much more than minimum recycling and maximum dump at high cost, which will soon reaches unmanageable proportions so that the engineers do what humans have done whenever we are at a loss: burn it, turning massive amount of waste into smaller and much more toxic waste.

### **A new business model**

We can imagine a business model whereby the city gets paid for the renewable energy generated through smart chemistry combining the digestion of slurry and organic waste, while carefully keeping some waste out of the food cycle through the recycling of plastics and glass, textiles and electronics. The left-over after digestion will be mineralized and is ideal as a soil enrichment. We can imagine a national park that empowers the land to re-embark on its evolutionary path, where biodiversity in mushrooms (especially the edible ones) inspires us to offer the local communities cholesterol and saturated fatty acids free mushrooms that are cheaper than the tasteless radiated food shipped globally, and provides additional feed to the birds which would never have been able to digest the lignocellulose from waste forest, but now can have additional nutrition from the forest while this park generates jobs and celebrates health with diversity. And the energy required is made from our own waste - for which we get paid?

Time has come to change the business model and realize that as in Nature everyone is contributing, and all work for the creation of social capital. While Breton Woods financial institutions, Chicago University based macro-economics and Harvard Business School management principles provided the needed response to development after the second world war, sixty years have gone by and the crisis we face today requires a fresh approach. Changing the business model will permit a change our society from a pillager to a partner while putting Nature on its evolutionary track.

### **About the Author**

*Gunter PAULI (1956)*

*An entrepreneur in business, science, arts and education has pioneered +100 projects demonstrating that a new market economy is emerging, where the commons are central, and the best is the cheapest. He is the author of 20 books translated into 35 languages. His latest "The Blue Economy" is a Report to the Club of Rome outlining how 100 innovations can generate over the next decade 100 million jobs. He has translated those creative insights into fables for children. He is father of 5 children, is a resident of Japan.*



Las Gaviotas, Vichada, Colombia prior to reforestation

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Las Gaviotas in 2009, 25 years later

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Solid organic municipal waste (Stockholm, Sweden)

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Slurry in a waste water treatment facility (Ulsan, Korea)

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Biodigester in Ulsan, generating 4x more methane by combining solid waste and slurry

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Mushrooms (*Pleurotus* spp.) farmed on forest waste  
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# Why DoN'T THEy LiKe Me?



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# The STRONGeST TRee



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Cover of the Dutch Edition of The Blue Economy

For more information please contact [office@euorparc.org](mailto:office@euorparc.org).