2050 – A Radical Utopia

Markus Schaefer

Wood invites us to reconsider the carrying capacity of our local environments. Throughout history, the use of timber has been related to the scale of its own bioregion. Imagining the future requires reassessing our understanding of resources.

2050 is not very far off, really. For those who remember the turn of the Millennium, we are already halfway there. In 2050, our children will be the same age as we are today. The glaciers will mostly be gone, until a next ice age possibly arrives in around 150,000 years. The sun will still irradiate the planet with 1 kW/m² for the next five billion years before it turns into a big fiery ball and minimally consumes Mercury and Venus if not also Earth and its moon – business as usual on a planet where stability has always been impermanent.

And 2050 (± 20) is the year for which Professor Didier Sornette calculated a global singularity.[1] A quantum and statistical physicist by training, and later a geophysicist at UCLA who subesquently held the Chair of Entrepreneurial Risk at the ETH until his retirement in July 2022, Sornette developed mathematical instruments to analyze and predict disruptions. He started with tremors in earthquakes and ruptures in spaceships. Soon he moved on to predicting financial bubbles with surprising accuracy. The singularities in these cases mark the point in time when a super-exponential equation growing too quickly shoots off the chart, towards infinity in finite time. And as no real thing or system, not even money on the stock market, can grow to infinity infinitely fast, that thing or system has to change. It might rupture, break, or burst with a state beyond that singularity that is new and inherently unpredictable.

All these examples are based on positive feedback loops that induce proportional growth. Tiny cracks in a spaceship lead to larger cracks which progressively weaken the rocket until it finally fails. Hype fuels a stock market rally until it gets out of bounds and the bubble bursts. When applying the same math to the growth of the world's population and its economy since the birth of Christ, as well as to the historical growth of financial markets, Sornette calculated such an impasse for 2050 (± 20). The bubble he is describing this time is us and our technological culture. Growth leads to growth and even more growth, until quite suddenly it no longer does.

Now, this is just a mathematical model: conjecture really. We should neither anticipate a defined moment, nor a specific outcome. And while it sounds dystopian, it offers new perspectives. Much of today's sustainability discussion is an ever more heated debate as to how to save the present we are living in. We are discussing, protesting, mediatizing, optimizing, tearing down, reconstructing, building artificial reefs and mechanical carbon sinks – focusing on individual fixes rather than holistic understanding, our technologically enhanced hyperactivity is probably contributing to the problem more than resolving it.

But how would we think and act, if we were to prepare for the future rather than preserve the past? We might be caught up in the economic, political, even academic constraints of our current system, or simply lack imagination, but for sure we need new narratives – radical utopias. And this is what makes the publication *Touch Wood* so interesting. When placing wood at the root of a vision for the future, today's externalities become glaringly visible. What happens when we take the book's premise seriously?

Before the advent of steel and coal, wood was both building material and energy source. It was the quintessential bioregional resource serving early settlements. And yet, the fate of forests closely followed the rise and fall of civilizations.[2] While civilizations grew, forests were often decimated; this was followed by environmental degradation, local climate change, soil erosion, and sometimes even civilizational collapse. Where the archeological record for cultural artifacts descends into darkness, is this point that the tree pollen count slowly recovered. What we define as dark ages were times for nature to replenish. Today, much of the technological progress fueling our industrialized urban civilization allows us to externalize environmental costs over larger distances and longer times to secure the present. We exceeded the carrying capacity of our local environments long ago.

The claim, therefore, that our current construction industry and its yearly output can be perpetuated simply by using more timber makes no sense. We need to proceed more holistically: timber would have to be sourced from the bioregion[3] and amortized over the growth cycle of a tree. Longer transport or shorter usage cycles would mean incurring a debt. This debt would need to be measured against real (bio)productivity rather than the virtual productivity of financial capital and its tendency to externalize costs that are difficult or simply inconvenient to measure. For this we would need to think about value in new ways, not by going back to a gold standard, but maybe by moving forward toward a biocapacity standard tied to the management of a bioregion that supports urban agglomerations and industrious cities,[4] since we will still require technology and human collaboration. Inevitably a yearly quota of timber would emerge. Everything else would need to be recycled or reused. We could think of generic primary structures – infrastructural shelves from stones, mud or concrete built to be amortized over several centuries – which then are fitted with wood or bamboo for the needs of the current generation. Process energy would need to be kept to a minimum, and human energy employed productively again. There would also need to be a process by which new actors were allowed into the market, where stasis could be prevented by a process of steady renewal. The role of technology would be to optimize the capacity of our local resources and communities and to monitor the use of them.

An example from Japan might illustrate this idea. When the Tokugawa shogunate came to power in 1600, going on to rule Japan for a quarter of a millennium, they vigorously promoted agricultural production, urban growth, and construction – all of which required timber. However, concentrating on their island nation alone, rather than on territorial expansion, they implemented effective, large-scale systems of forest management. This was complemented by well-organized villages that in turn developed and enforced their own local land-use arrangements within those wider regulations. By 1700, woodland management was well established and over the following 150 years supplemented by extensive reforestation programs that utilized seedbeds, seedlings, cuttings, and detailed programs of aftercare and managed harvest, in order to restore timber forests and help control erosion.[5] At the same time, Edo became a verdant, green city of one million inhabitants. Half of its area consisted of forests or wooded lands, with tree-shaded gardens occupying half or more of the estates of samurais, temples, and shrines – a "City Mosaic Garden," where people lived among man-made forests.[6]

It needed a shogunate to enforce such a system, and well-organized villages to manage it – not necessarily a desirable political context. And yet, thinking in terms of islands and villages, bioregions, and local material cultures, each with their own (self-imposed, digitally managed?) constraints might be a helpful thought model for future resilience.

Back to Sornette: There is no one single technological or regulatory fix to escape the impasse of our times. Instead, we need a systemic understanding of ourselves as well as the courage to change at the roots, recalibrating the very connectedness that makes us so volatile. Envisioning a radical utopia, a resilient bioregion rooted in timber, might be an instructive first step.

1 Anders Johansen and Didier Sornette, "Finite-time singularity in the dynamics of the world population and economic indices," *Physica A: Statistical Mechanics and its Applications* 294, 3–4 (2001): 465–502; Andreas Hüsler and Didier Sornette, *Human population and atmospheric carbon dioxide growth dynamics: diagnostics for the future*, *European Physical Journal* Special Topics 223 (2014): 2065–2085.

2 Sing C. Chew, *The Recurring Dark Ages: Ecological Stress, Climate Changes, and System Transformation* (Lanham: 2006).

3 The bioregion is an idea developed in California in the 1960s and 1970s, combining the ecological concept of coherent biomes and our life therein with the political vision of governance within natural boundaries and their carrying capacities. See for example: P. Berg and R. Dasmann, "Reinhabiting California," *The Ecologist* 7, no. 10 (1977): 399-401, or, Christian Arnsperger, "Communities of Reinhabitation: Bioregionalism, Biogeography, and the Contemporary North American Reflection on Sustainability," *SPELL* 35 (2017): 145–164.

4 Hiromi Hosoya and Markus Schaefer, *The Industrious City: Urban Industry in the Digital Age* (Zurich: 2021).

5 https://www.japanfs.org (accessed Aug. 14, 2022).

6 Ibid.