

# Lifting the green veil

Does natural always mean sustainable?

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**In modern literature as Salome dances, each drop of a veil represents an illusion falling away, until what's left is the bare naked truth.**

It's not a metaphor I intend to torture today, and in any case the cosmetics industry operates behind so many veils of illusion that 20 minutes isn't enough to even begin to tackle it.

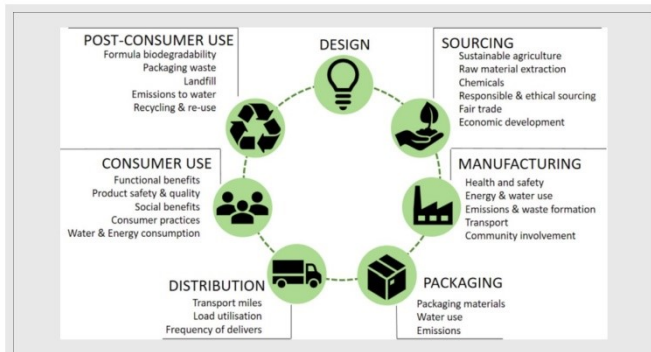


This summit is focussed on "formulating for the conscious consumer" and over more than two decades, through my writing and campaigning, I've played an active part in helping to cultivate consumer awareness of a whole range of environmental and sustainability issues.

So when I was invited to speak today my first thought was yeah sure I can do that. And then after about five minutes of reflection I wondered whether I had in fact lost my mind in agreeing to do this. Because the purpose of meetings like this is to bring people together, to buoy them up, to help them network, to give them a sense of the infinite horizons of their industry and the positive future that awaits them.

Whereas in agreeing to come here today I realised that I had been asked to do exactly the opposite of that.

But maybe, in the midst of all the positivity and possibility it's good to take a pause and consider things from another perspective. And so, here is your moment of pause.



Formulators are the creative heart of the cosmetics industry. You guys get to work with some really cool science and ingredients and you get to wrestle with some interesting challenges.

But you also work in an industry which, for all of its coolness and

superficial glamour has a toxic side – and I'm not just talking about the recent study from the University of Colorado that showed that in the rush-hour crush, volatile emissions – what the researchers charmingly referred to as our 'personal plume' – from shampoo, lotions, deodorants and perfumes is comparable in magnitude to those from car exhausts.

The toxicity I'm talking about can be seen in the industry's business model which relies on infinite growth.<sup>1</sup>

It's in the emotional and psychological manipulations of customers – because that infinite growth depends on people's continued dissatisfaction with themselves and their belief that they can shop their way out of that feeling.

**GROWTH, GROWTH, GROWTH**

- GLOBAL PRODUCTS**
  - 2018 – \$532.43bn
  - 2023 – \$805.61bn
- NATURAL PRODUCTS SECTOR**
  - 2018 – \$34bn
  - 2025 – \$48bn
- IN THE UK**
  - Households spend 400% more on personal care products than in 1985

The slide also features a photograph of a person sitting on a toilet in a bathroom, with a large Christmas tree made of various personal care products (shampoos, lotions, etc.) standing next to them.

It's also toxic in the way that it has wrung all the meaning out meaningful words; beauty, certainly, but also words like natural, green, sustainable, environmentally friendly. Words that represent to the average person that there is a better, more connected life available to us all.

## What is sustainability?

So maybe the place to begin here is to establish a baseline about sustainability as a concept.



A friend of mine is fond of saying: sustainability is like teenage sex; everyone says they are doing it, but hardly anyone is; and the ones who are doing it are probably not doing it right.

One of the reasons for that is there is still no meaningful definition of what sustainability

is, and no universally applied criteria by which we can assess who is doing it right.

The term sustainability was first used in 1972 in a book called A Blueprint for Survival and it referred to living within the limits and boundaries of the Earth's carrying capacity.

Within a decade it had been co-opted by global industries and was being used interchangeably with phrases like “eco development” and “sustainable development” and “green growth”; terms that eventually became defined as the “triple bottom line” of people, planet and profit – and which eventually evolved into the most common definition: “meeting the needs of the present without compromising the ability of future generations to meet their own needs”.



That sounds superficially fine; but the more you think about it the more obvious it becomes that running through concepts like the triple bottom line and sustainable development and green innovation is a political economic and a corporate subtext that very much supports the notion ‘business as usual’ and infinite growth. Concepts that are completely at odds with a sustainable world.

It also raises the question of who or what defines concepts like ‘balance’ and ‘needs’.

And it’s problematic also because while profit can be measured in a relatively straightforward mathematical way, people and planet, that is to say culture and environment, which are far more complex and systemic in nature, can’t. And this makes the three equations almost impossible to compare, let alone balance.

And while the triple bottom line gives the impression that there are just three dimensions to sustainability in fact, sustainability is immensely complex.

It also encompasses health – physical, mental and emotional. It's about wellbeing, equality, longevity, tradition and culture. Its functioning encompasses technology and logistics for sure – but also social and political cohesion. Perhaps most importantly of all, sustainability as a concept is absolutely rooted in limits and boundaries and restraint – and for that reason, in trade-offs within those limits and boundaries and restraints.



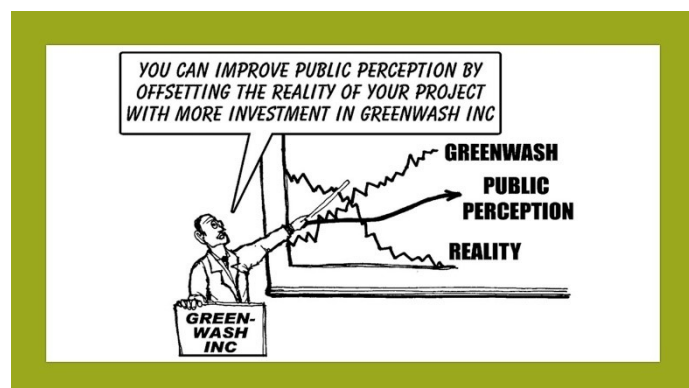
When I was editing the *Ecologist* magazine I had a list of 80 questions that I encouraged my team to think about when faced with a new technology or new proposal for saving the world. A recent paper I read on sustainability in farming concluded that there were upwards of 500 different

indicators of sustainability across that sector.

I've not yet seen anything approaching that level of complexity in cosmetics. Instead what we have vague labels intended to convey a sense of greenness and naturalness.

Or to put another way the tendency is too often towards greenwash.

I mean it's fairly easy to identify a product with a high percentage of natural ingredients. But identifying a sustainable product is harder. Sustainable products with their focus on systemic thinking and what we owe to the future set a much higher and more difficult to obtain standard.



And so we compartmentalise. We grasp at single concepts and single solutions. We turn nature, which has an intrinsic value, into natural capital where its only value is what can be incorporated into the economic bottom line. We talk about recycling, carbon counting, waste management. We tinker at the edges and

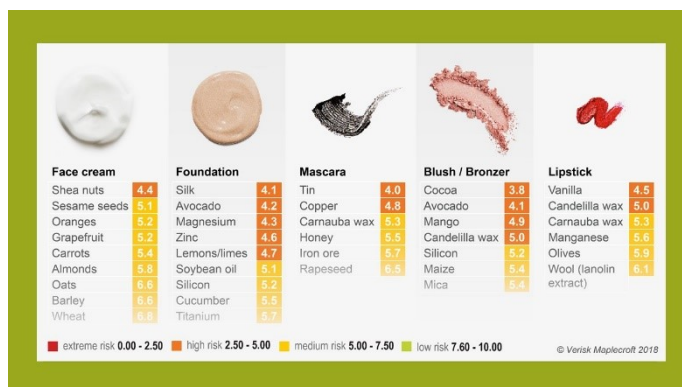
focus on the easy stuff because that doesn't require too much change our thinking or our business habits too much.

## The long haul

When I first started researching and writing about cosmetics the goal was to get industry to recognise the problems of the vast amount of unregulated and largely petrochemically-derived ingredients that it was using. To limit these and where to possible substitute more natural ingredients into its formulations. The first response from industry was to say, 'Well petroleum is a natural ingredient – so what's your problem?'

The problem then, as now, is complexity. Sure petroleum is natural – but it's extraction and refining is energy intensive and heavily polluting. The ingredients synthesised from it can be toxic, indeed many of the ingredients that were being focused on, particularly fragrance ingredients, were actually classified by some authorities as toxic waste. And of course petroleum was and is running out.

And although it took nearly a decade industry began to shift and draw on more natural ingredients at first small amounts in the same basic matrix of synthetic ingredients. But there were also pioneers making products from high levels of natural and organic ingredients who made this a selling point for their brands. And their success caused more and more brands to jump on that bandwagon.



The problem was that these natural ingredients were often sourced with almost no oversight of the raw materials supply chain, which meant that even though they were natural they were not sustainable. Many of them still aren't. Shea butter, silk, vanilla, vetever, cocoa, palm oil, mica, all natural cosmetic ingredients that carry environmental and social risks including land grabs, deforestation, harm and displacement of wild animals, human trafficking, child labour and discrimination.<sup>2</sup>

Fast forward a few years and I can see that a lot of people are really excited by the idea of upcycling food by-products or side streams as a source of cosmetic ingredients.

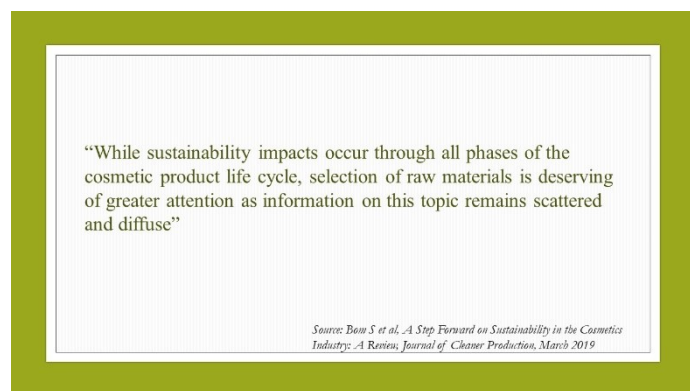
The problem I see with that is that like recycling or incineration or biogas production it can only be sustained in a business as usual society that continues

to produce large amounts of waste, whereas the goal of a sustainable society to reduce waste at source.

The greatest ecological impact of cosmetics, we are told, is in the post-consumer phase, in dealing with packaging and its disposal. But remember that waste is one of these easy options to focus on, because it's visible and relatively easy to calculate and in focussing on waste, which is very sexy and consumer friendly, we obscure deeper issues of sustainability elsewhere in the supply chain.

In fact a recent study from the University of Lisbon<sup>3</sup> looked at sustainability in cosmetics noted that future development in this area required more careful focus on raw materials used in the formulation phase of a product's lifecycle.

The authors noted "While sustainability impacts occur through all phases of the cosmetic product life cycle, selection of raw materials is deserving of greater attention as information on this topic remains scattered and diffuse."



They went on to say that it was "critical to address the sustainability aspects of ingredients" because of how significant the design phase is in a product life cycle.

They noted also that many ingredients were still known by one name, irrespective of origin (animal, vegetable, synthetic), and that some form of generally agreed sustainability measure across the industry, would not only help formulators it would also help consumers to better benchmark products for themselves.



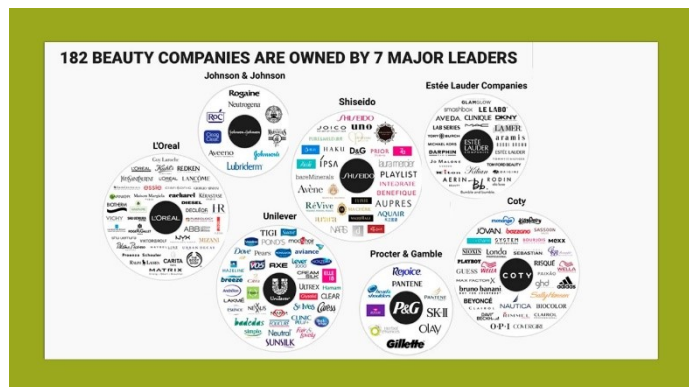
And yet industry has been slow to implement any kind of meaningful measurement of sustainability. So for instance if you look at this slide from a 2017 report from Quantis you can see some interesting contradictions.<sup>4</sup>

And in some ways this reinforces my view that even as the cosmetics industry says that it is looking for natural alternatives to silicones,

petrolatums and glycols in reality it's nearly run out of things to say about truly natural ingredients and actually now sees them as a problem.

And one reason for this is that in a climate changing world, natural capital is an unreliable source for raw materials. Both the quality and the cost of natural ingredients is responsive to changes in agriculture, climate, weather, pests and disease. We are seeing some of that now with olives, lavender and rosemary – which are vulnerable to drought and to a bacterium which is becoming more widespread as the planet warms. (*Xylella fastidiosa*)

And as the ecosystems on which natural ingredients depend become degraded and products become more scarce, companies may find themselves not only competing for natural materials and driving up prices but incentivising the rapid and unsustainable depletion of the natural world.



Industry can change this. The relative few corporations that control the majority of the world's cosmetic brands have the potential to change the ethos and the habits of their entire corporate family.

### The abandonment of nature

But changes and challenges to 'business as usual' have come largely as a result of pressure from outside individuals like myself and from groups – Environmental Working Group, CITES, FairWild, FairTrade, organic certifiers, Friends of the Earth, ETC group and many others have all been consistently ahead of the curve in flagging up both current and future challenges.

But rather than deepening the commitment to sustainability, what I see is now, or what I think I see, is a trend towards the slow abandonment of nature, and a move back into the lab and into genetic engineering and synthetic biology (or synbio).

These new methods are being sold as both natural and sustainable – claims which would benefit from a lot more scrutiny.



In this iteration we are looking at a future where yeasts and bacteria are being genetically re-engineered to become living biofactories to produce a variety of ingredients for the fragrance and flavour industries. Things like vetever, vanilla, orange, grapefruit, musk, sandalwood, agarwood

We are also looking at algae, which are being re-engineered to produce a whole range of industrial oils for fuel, for industry and also for cosmetic emollients such as squalane and palm oil substitutes.

Genetically re-engineered probiotics – for use in foods, supplements and cosmetic formulations is also a growing part of this sector.

This last one I find particularly worrying. Given how little we still understand about the human body's microbial community – with which we have co-evolved over millions of years – and how completely mankind has screwed up every single ecosystem it has ever come into contact with, I find the arrogance that underpins the claims of such products staggering.

In all other areas of genetic engineering – in food, animal welfare, conservation, human medicine and reproduction – there are urgent discussions taking place not just around sustainability but around ethics. Where are those conversations in the cosmetics industry?

We haven't really got enough time to discuss all the concerns around this switch from chemistry to biotechnology but let me just cover a few things that relate to claims of naturalness and sustainability.

One thing that is clear they ain't natural. If they were chemical companies would not be able to patent them. In fact the granting of a patent depends on the ability to prove that the invention is significantly different from what exists in nature. Indeed some man-made synbio organisms have never existed on the planet before

Growing SynBio organisms in large quantities is a wholly industrial process. These organisms need to be fed; they need vitamins, amino acids, fats, salt and sugar.



Sugar plantations, like palm oil plantations, is highly environmentally destructive. Sugar cane in Brazil is grown in the Cerrado region, one of the world's most biologically diverse savannahs, and home to 5% of all the species on earth.



New sugar plantations reduce biodiversity, deplete the soil and the water table, and introduce large-scale use of agrochemicals. They push soya and cattle production deeper into the rainforest, through clear-cut logging.

They release significant amounts of greenhouse gases from disturbing soils when land is farmed and from burning the cane stalks pre-harvest. The ash and smoke from the cane burning is also associated with a raft of human health problems including respiratory, cardiovascular, ocular and dermatological disorders.

In other words, the notion that these lab creations are de facto cleaner and more sustainable than ingredients from nature must be challenged.

These concerns aren't just mine. The multiple scientific committees advising the European Commission, the international Convention on Biological Diversity, the United Nations Environment Programme, the Presidential Commission on the Study of Bioethical Issues – all have expressed similar concerns about synbio.<sup>5</sup>

**PRECAUTION REQUIRED...**

**Negative impacts from accidental or deliberate releases:**

- Persistent and/or invasive species
- Disruption of food webs
- Transfer of genetic material to wild or cultivated species

**Feedstock production for Synbio applications in bioenergy, agricultural and chemical industries drive significant land-use change:**

- Negative impacts on biodiversity and conservation
- Increased extraction of biomass from agricultural land or from the natural environment
- Additional intensification of agriculture leading to decreased soil fertility and, therefore, higher fertiliser use

Source: Scientific Committee of the European Commission, 2015

Step back and take a longer look and you can see how the pendulum swings. Having seen that whale oil supplies were running low due to the over enthusiastic slaughter of whales, the early cosmetics industry switched over to petroleum.

Eventually, noticing that petrochemical supplies were running out the industry switched back to so-called natural capital. Now that climate change, accelerated by the over exploitation of petrochemicals and other pressures, is impacting that natural capital, industry is retreating to the lab.

## Less is more

And so I find myself casting around for some clever thing to say about nature and sustainability and the nature of sustainability.

The truth is that for all its talk about innovation the cosmetics industry hasn't changed much in more than a century. In formulation and customer facing messaging, the pendulum swings back and forth between nature and science – doing justice to neither because the goal remains growth – by any means.



So let me leave you with a lesson from another industry. The global meat industry – worth more than \$1 trillion a year – is now facing calls to cut its production in half. Because more than any tinkering at the edges by changing animals diets or genetically engineering them, a cut in production and a trend towards consuming less but better quality meat is the single most expeditious and effective way to ensure sustainability.

In formulating for the conscious consumer I have no doubt that informed formulators can deliver. But we also need to take to heart the idea and infinite growth, vast product ranges, over-crowded marketplaces stand in the way of true sustainability.

## Select references

- <sup>1</sup> OrbisResearch.com: "Global Cosmetics Products Market-Analysis of Growth, Trends and Forecasts (2018-2023). See also Grand View: <https://www.grandviewresearch.com/industry-analysis/natural-cosmetics-market> ; <https://www.grandviewresearch.com/press-release/global-natural-cosmetics-market> <https://www.ons.gov.uk/economy/nationalaccounts/satelliteaccounts/timeseries/adyi/ct?referrer=search&earchTerm=adyi>
- <sup>2</sup> <https://www.maplecroft.com/insights/analysis/supply-chain-risks-blemish-cosmetic-reputations/>
- <sup>3</sup> <https://www.sciencedirect.com/science/article/pii/S0959652619309655>
- <sup>4</sup> [https://quantis-intl.com/wp-content/uploads/2017/02/cosmetics\\_report\\_2017\\_01\\_30.pdf](https://quantis-intl.com/wp-content/uploads/2017/02/cosmetics_report_2017_01_30.pdf)
- <sup>5</sup> Final Opinion on Synthetic Biology III: Risks to the environment and biodiversity related to synthetic biology and research priorities in the field of synthetic biology, Scientific Committees of the European Commission, 2015, [https://ec.europa.eu/health/scientific\\_committees/consultations/public\\_consultations/scenih\\_r\\_consultation\\_28\\_en](https://ec.europa.eu/health/scientific_committees/consultations/public_consultations/scenih_r_consultation_28_en)