

Written by

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20 Sep 2019

## Fifty shades of green

**FREE FOR ALL** SUSTAINABILITY CALIFORNIA

**20 September 2019** *In line with today's Earth Strike Day's events around the globe designed to encourage action in the face of climate change, we are republishing free Tam's detailed consideration of sustainability and wine. See also details of a London conference on this topic at which she will be speaking.*

**10 September 2019** *'The heart-based approach to sustainability is a little naive. We need to be scientific and clear-headed, without giving up the heart, to get ourselves out of this mess.'*

California is an environmental conundrum. It is the USA's fourth-largest producer of crude oil out of 50 states, the third-largest oil refiner and the largest consumer of jet fuel, burning one-fifth of America's jet-fuel consumption in 2016. Its total energy consumption is the second highest in the country. Yet, per capita, it is the third-lowest energy consumer, it's ranked second in the country for hydroelectric generation and first for electricity from solar, geothermal and biomass sources ([see www.eia.gov](http://www.eia.gov)).

Culturally, it is considered to be a global leader in environmentalism, recognising the threat of climate change long before it became front-page news, and putting in place some of the most aggressive sustainability policies, regulations and targets in the world. The state conspicuously stands against the climate-denying Trump.

Despite that, as biologist Rob Dunn points out in his book *Never Out of Season* (Little Brown and Co, 2017), 'in some ways, California, where the local food movement is at its strongest, is probably one of the worst places to eat locally, at

least strictly from the perspective of environmental costs'. California farming, a \$50 billion industry, relies heavily on dairy, grapes and almonds – all monocultures, all high-volume water-consumers and, in the case of dairy, energy-intensive and methane-producing.

Steven Matthiasson was born in Winnipeg, the son of two anthropology professors. He grew up in Arizona, spent holidays on family farms in Manitoba and North Dakota, studied philosophy in Los Angeles and then drifted a little in San Francisco, working as a volunteer in the city's community gardens.

It was a degree in horticulture at UC Davis that finally had him heading in the direction of wine, and meeting his future wife Jill (pictured below with Steve), a fellow UC Davis student studying sustainable agriculture. All of this put him firmly on the road to sustainability. It helped that one of his first jobs was working with the Lodi-Woodbridge Winegrape Commission to develop one of first sustainability protocols for wine producers.

Matthiasson is now a leading Napa viticultural consultant, as well as having his own small family farm and winery in the Valley. He's no stranger to the economics and pressures faced by the prominent players (his client list includes Stag's Leap Wine Cellars, Araujo Estate, Spottswoode and Hall) and the little guys, and having worked on several sustainability initiatives, he knows the arguments on all sides.

I attended a sustainability workshop in London not long ago, which Matthiasson opened with the words above: 'The heart-based approach to sustainability is a little naive. We need to be scientific and clear-headed, without giving up the heart, to get ourselves out of this mess.'

The workshop – which I sincerely hope is the first of many as the UK wine trade begins to shake off its comfortable apathy – was partly driven by California Wines to talk about what they're doing for sustainability, but the second half was a panel discussion with representatives from the UK wine, cheese and coffee businesses, to focus on how to engage the consumer such that sustainability becomes an integral part of business success.

Matthiasson kicked off his presentation by identifying one of the first barriers to

overcome: the misperception that 'sustainable' is something you are or aren't, depending on which boxes you've ticked and which logos you've been awarded. 'Sustainability is something we're working towards and trying to do but no one is there yet', he explained. 'No one is sustainable.' We often talk about sustainability as if it is a status you can achieve, as if once you've got the certificate your job is done. Matthiasson disagrees: 'Sustainability is a continuum, not a state.'

Another challenge is the definition of sustainability. Unlike organics or biodynamics, there is no national or international, regulated governance for sustainability. Different regions have different problems and priorities and, depending on where values lie, the interpretation of sustainability can vary widely, not just from place to place but from organisation to organisation.

This can lead to unhelpful finger-pointing and dissension. It can also see groups competing with each other for funding and memberships, undermining progress rather than working together to build on it.

Napa alone has at least six different sustainability programmes, not including the county conservation directives, and over 50% of farmland is certified by one or more programmes. Some are broad, some are narrow in reach. While one might focus on fish or soil, others focus on farms as an entire eco unit; some have a more feeling-oriented approach, others are more scientific. 'But', Matthiasson asserts, 'I can't think of a single example of sustainable practices where they don't improve wine quality.'

Matthiasson, who has spent the last 20 years or more working on sustainability in his own family vineyard as well as in his clients' vineyards and accreditation programmes, believes that it takes a combination of certain critical elements, all of which need to be addressed, but that it's vital to start working on at least one element rather than nothing at all.

He defines the six areas of sustainable wine production as:

- soil conservation and health
- minimising chemical inputs (fertilisers, pesticides, herbicides, fungicides)
- increasing habitat and biodiversity

- water conservation and management
- carbon footprint
- employee safety and opportunity.

What struck me in particular about Matthiasson's presentation was that the emphasis was not where I thought it would be.

Much of our current viticultural focus is on chemicals. One of the bloodiest battle lines between organic and conventional farmers is that of chemical inputs: sulphur, copper, fungicides, herbicides, pesticides, fertilisers; how much, how often, when. But as Monsanto court cases loom and newspapers splash increasingly alarmist headlines about weedkiller traces in our wine and bees dying from pesticides, we almost forget – at great cost – that there are other equally destructive practices in the wine industry.

This is not to say that minimising chemical inputs isn't vitally important. We need to find biodegradable, healthy ways of managing invasive weeds that choke young vines, use up precious nutrient and water resources, and harbour pests and diseases. We need to find ways of controlling problems such as mildew and pest damage that don't unbalance the biosphere. We need a public outcry to pressure research institutions and those who fund them into pouring investment into ecologically sound controls. But this is not the whole picture.

The Dust Bowl of the 1930s is possibly one of our starkest reminders of the devastating effects of soil mismanagement. 100 million acres (40.5 million ha) of land destroyed, two million people displaced, 850 million tons of topsoil lost in 1935 alone. Not to mention the black dust storms that reached as far as New York that dumped 12 million tons of soil on Chicago in one night, or the 908 hours of complete blackouts caused by dust blizzards in one year.

All this was caused by farmers ploughing up native grasslands and ripping out trees to make room for crops. You'd think it was a lesson that would never need to be repeated. But drive around any farming land in the world, and you'll see fence-to-fence shallow-rooted crops, hedgerows and trees pulled out to make way for machinery and crops, deep ploughing, and hillsides denuded of vegetation.

Wine regions are not without guilt. We're all familiar with the sight of bare earth under vines and between rows thanks to herbicides or ploughing, and those in viticulture know only too well the extent to which native vegetation has been stripped to make room for vines.

The impact of this is not just erosion. Damaged soils contribute – directly and indirectly – to drought, flooding, disease and pest damage, river silting and loss of aquatic life, nutrient leaching, loss of biodiversity and microbial life, and carbon dioxide emissions (tilling, as well as making soil more vulnerable to erosion, releases carbon into the air).

‘Soil conservation’, Matthiasson emphasised, ‘starts with building organic matter’. A vineyard high in organic matter has good available-water-holding capacity and infiltration (rain soaks in rather than running off), holds nutrients, buffers pH and salts, and has rich microbial diversity and biodiversity which in different ways protect vines against pests and diseases.

Cover crops not only protect soil from erosion and improve infiltration, but they further enrich microbial diversity and biodiversity. What's more, they become a carbon sink. When mown, they become mulch that controls high weed growth and breaks down to add to the organic matter in the ground.

And this is where soil conservation leads indirectly to an increase in habitat and biodiversity.

Biodiversity is not a one-dimensional aspect of sustainability, a nice tick-box extra that means the back label offers pretty flowers and butterflies that tourists can photograph along with the vines. It not only saves insect species, flora and wildlife from our pernicious modern farming methods. In restoring ecological balance, and thus going some way to mitigate the impact of monocultural viticulture, we encourage the balance of predatory species and create a natural protection for our vines from pests and diseases. (The picture below is one of the many bluebird boxes installed on the Matthiasson property to encourage the birds that predate on leafhoppers.)

But it takes upfront investment and long-term vision to set aside parcels of land for

wildlife habitat rather than vines; it takes nerves of steel to restore hedgerows that were, in the case of Napa, ripped out after the Second World War to maximise food production. It takes time and research and money to restore native grassland, as the Henschkes and Grossets are doing. It takes foresight and effort to plant trees. But in restoring vegetation that flowers sequentially, takes different forms and provides habitats so that the insects can take care of themselves, vignerons are ultimately investing in their vines and the health of the people who work those vines.

Water conservation is not something that often comes up in conversation, especially in Europe. But I was also struck by how seldom it was discussed in Australia, where I'd thought it would be one of the burning topics. Instead there seems to be a nonchalant attitude globally that as long as there is irrigation and a water source for the winery, water is not an issue.

Matthiasson believes otherwise. 'We've done a number on the rivers and streams in the western US', he said, and I suspect the same could be said for anywhere else in the world.

The old-fashioned mentality of keeping riparian areas denuded as well as tillage practices have led to the destruction of aquatic life and vegetation together with erosion, siltation and flooding. Using plastic ties in the vineyard and leaving plastic waste in the vineyards has resulted in plastic pollution of waterways – much of which ultimately ends up in the ocean. Pumping water from aquifers, wells, lakes and rivers has damaged ecosystems and drained precious natural resources. Run-off from vineyard fertilisers and pesticides contaminates waterways.

Not all vineyards can be dry-farmed and no winery can be operated without water, but there are sustainable solutions. An increase of just 1% of organic matter can more than double the available water capacity of the soil. Row orientation, pruning and training can all contribute towards heat protection; shade cloth and wind breaks can protect from hot, drying winds; rainwater collection can feed wineries.

Controversially, Matthiasson also threw in the challenge that 'being proud of fruit thinning is not necessarily a good thing. Low yields below vine balance is not a

sustainable practice. What can the land naturally support yield-wise without being pushed? *That's* sustainable!

## Carbon matters

Another fundamental pillar of sustainability is the Big C, the one that everyone is talking about, the carbon footprint. Interestingly, though, it's not a big topic of conversation in the wine industry, where fossil fuels fire the tractor engines, run the presses, keep the tanks cool, make the glass bottles and ship the wine around the world. Many an organic wine has landed on my tasting table in an outrageously heavy bottle (to say nothing of it having been extracted from polystyrene capsules in packaging swathed in bubble wrap and half a mile of plastic tape).

All wine producers have a duty to use the lightest bottles they can, package their bottles in the greenest cardboard-only boxes. All wine producers can and should sequester carbon by planting trees, cover crops and encouraging native flora in and around vineyards. Most producers could switch to clean electric energy or install solar. Many producers could use lighter, greener (possibly even electric) vehicles for lighter farm work.

## People count

The last key area of sustainability that Matthiasson talked about was employee safety and opportunity. Employee safety includes appropriate, well-maintained equipment and the correct operation of it, working hours, breaks and holidays, training, fitness, reporting systems, and not exposing employees to anything that might endanger their health or welfare. He explained that social sustainability means paying living wages. These are wages that take into account the cost of local accommodation (whether temporary and seasonal or permanent), transport, healthcare and food, especially when the wine region is in an expensive area. And then it's about providing opportunity: language classes and literacy, education, vocational qualifications, certifications and leadership.

It struck me that much has been written about the productivity of a motivated and well-rewarded workforce, and yet across the globe, wine is produced from grapes picked by people on low wages working long hours in backbreaking

conditions, sometimes without legal paperwork. We seldom connect the price of a bottle of wine with the person who got up at 1 am, drove two hours from a seasonal trailer camp to the vineyard, picked from 3 am until the searing heat of midday with nothing but a couple of short breaks, and then lined up to collect €30 before the long journey home.

The one thing Matthiasson didn't talk about was economic sustainability but the discussion panel took this aspect on with alacrity.

Janina Grabs, a sustainability governance researcher at ETH Zurich who did her PhD on the design of private sustainability standards and their impacts on Latin American coffee farmers' production practices, defined strong sustainability as the three circles of economic, environmental and social responsibility embedded within each other. 'We need to create systems that respect the planet and people but are still profitable.'

She added that the wine industry could learn a lot from the mistakes made by the much-more established certification schemes in the coffee industry. However, in her opinion, 'top-down solutions only work if they're accompanied by a lot of outreach and education. There needs to be a cultural change, a generational change in how we think about agriculture. Agriculture has been chemical and industrialised for the last three generations or more and so there has to be a profound shift in attitude.'

Bronwen Percival, author and head cheese buyer for Neal's Yard Dairy in London, chimed in with the observation that the dairy industry has been totally focused on social sustainability for so long that they have neglected environmental and economic sustainability. 'Not all pastoral farming is sustainable, and a lot of it relies on subsidies.'

## Resistance

Sergio Verrillo is the founder and winemaker at Blackbook London Winery. He started off as a sommelier, did his oenology degree at Plumpton College, and made wine in Surrey (UK), California, Burgundy, Stellenbosch and New Zealand before coming back to London to make urban wine in Battersea. 'I think we're a ways

away,' he said, commenting on wine production in the UK. 'There were no sustainability guides until 2010. WineSkills was a DEFRA-funded programme, part of which was intended to create the first UK sustainability initiative but, due to lack of funding, it was abandoned. I'm part of a board trying to revive that, but the UK industry is lagging behind.'

Most illuminating was Verrillo's comment that the lack of commitment in the UK wine industry boiled down to economic fears. 'People think it will cost more than it actually will do. There is a lack of understanding of what sustainability actually is.'

Perhaps this is one of the primary keys to unlocking resistance to sustainability. Sustainability is not – as many believe – a luxury that only the rich can afford, or a caravan-lifestyle option for hippies choosing to live off state benefits. Sustainability is, increasingly and more urgently, integral to business viability. And business viability is integral to sustainability. Never before have the environmental credentials of businesses been so scrutinised by the public. Never before has the long-term survival of the planet – and therefore business – depended so utterly on a radical change in the way we interact with our environment.

When it comes to measuring the cost of sustainability, we're wildly under-estimating both the cost of not becoming sustainable and under-estimating the long-term savings of becoming sustainable.

## The cost of it all

The other primary point of resistance became evident as it cropped up again and again during the panel discussion: the cost of sustainability has to be compensated for by consumers. The position of the panel members was quite clear: until consumers show willing to foot the bill, producers cannot afford to become sustainable. This is worthy of a whole debate in itself.

On the one hand, we (in the developed world) live in a time of unprecedented wealth where we spend less of our monthly income on food basics than we have ever done in the past and we're more reluctant than ever to pay for it. We want to spend under £4 for a whole chicken and we don't want to spend more than £1 on

a loaf of bread. The average price paid for a bottle of wine in the UK is £5.68, which, according to the Institute of Alcohol Studies, makes wine 60% more affordable now than it was in 1980.

We're essentially paying less for decent wine than previous generations have, and expecting those who make it to produce it for less. As we, with the muscle of supermarkets behind us, drive prices down, producers are having to look for shortcuts and industrialised production of food and wine is one sure-fire way to bring costs down as low as they can go.

On the other hand, to conflate good farming practices with luxury, artisan goods and the price tag that category demands is effectively to say that sustainability is a niche product available only to the privileged elite. This is not just ethically questionable, but dangerous.

So, we're left with the burning questions of just how much sustainability actually costs to implement, who should pay, and how much extra (if anything) we should be paying for the finished product.

Answers on a postcard, please.