

Organic Agriculture, Capitalism and the Parallel Reality of the Pro-GMO Evangelist

By [Colin Todhunter](#)

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Consider that India had for generations sustained one of the highest densities of population on earth, without any chemical fertilisers, pesticides, exotic dwarf strains of grain or 'bio-tech' inputs. And it did it without degrading the soil. That is according to the evidence provided by Arun Shrivastava. What is truly impressive, however, is he then goes on to demonstrate that in the 18th and 19th centuries India achieved [better productivity](#) levels with organic methods than those of the 'green revolution'.

Now consider that, in 2011, the UN Special Rapporteur on the Right to Food (Olivier de Schutter) [called on countries to reorient their agriculture](#) policies to promote sustainable systems, not least agro-ecology, that realise the right to food. And Consider that The International Assessment of Agricultural Knowledge, Science and Technology for Development ([IAASTD](#)) was the work of over 400 scientists and took four years to complete. It was twice peer reviewed and states we must look to smallholder, traditional farming to deliver food security in third world countries through agro-ecological systems which are sustainable.

Yet, for all these considerations, what we witness from powerful interest groups is an on-going campaign to denigrate and marginalise organic-based farming and systems based on it. For example, here is a quote from a recent article by [Shanthu Shantharam](#):

Almost all anti-GM folks believe in organic agriculture and they have been active at the state level in India to convince gullible politicians that organic agriculture can feed the world and give food security. This is not accepted by most established agricultural scientists. Most farmers' organizations in India, including BKS and SJM, are champions of organic farming, and organic farming completely prohibits the use of GM seeds. So, if the country accepts organic farming, there is no place for GM technology, and therefore they want it to be banned. India will pay a heavy price if they heed the anti-GM lobby on organic farming, a niche mode of cultivating crops on a small scale or in kitchen gardens.

If you read the entire article from which that extracts comes, it is clear that pro-GMO lobbyist Shantharam thinks the best way to push for GM is to attack and smear scientists and campaigners (with unsubstantiated claims) who disagree with him and degrade credible approaches to agriculture that do not involve GM.

The case for GM [cannot be made in terms](#) of better yields, less chemical inputs, safety, impact on the environment, nutritional value or improved [farmers' incomes](#), so the tactic is to denigrate alternative solutions. And Shantharam's favourite target is organic agriculture and anyone who advocates for its widespread use.

Using less bombast than Shantharam to make his point, pro-GM microbiologist [Tony Trewavas](#) of Edinburgh University believes organic approaches like agro-ecology are not sufficient to feed the world:

If agro-ecological approaches can currently match yield that can be attained by using modern farming methods then by all means use it. But if not and my understanding is that currently it cannot, then they should not be the farming method of recommended choice at present... No-one with any concern for humanity or the welfare of its population should currently consider any other alternative [to GM]. The groups that campaign for this kind or that kind of farming method and destroy crops to try and bounce others into their point of view have lost that fundamental concern for their own species.

In an attempt to drive his belief home, Trewavas does his cause no help by using GM industry-inspired PR rhetoric masquerading as 'expert opinion' in an attempt to smear and marginalise proponents of agro-ecology by implying they are 'enemies of humanity'. And he is [not alone](#) in going down this route.

Whether in academia or elsewhere, mouthpieces for their transnational agribusiness masters have no shame in churning out misinformation and cheap slurs to forward a pro-GM agenda that is based on fraud and a subversion of science, as documented in Steven Druker's book '[Altered Genes, Twisted Truths](#)'. And this agenda does not possess overwhelming support within science, despite the claims of GM supporters. This much has been made clear by [Food & Water Watch](#) and by Druker himself in a [recent TV debate](#) and his follow up points [here](#).

But PR, slurs and smears aside, the pro-GM lobby's specific attack on organic agriculture (and more generally agro-ecology) merely being a 'kitchen table niche' mode of farming flies in the face of reality.

According to [new research](#) carried out by a team of US scientists, organic farming could provide ample food for the whole human population, while causing less pollution and fewer health problems than conventional agriculture.

Their review of hundreds of published studies provides evidence that organic farming can produce sufficient yields, be profitable for farmers, protect and improve the environment and be safer for farm workers, even though organic production currently accounts for only one percent of global agricultural land. It is the first such study to analyse 40 years of science comparing organic and conventional agriculture across the four goals of sustainability identified by the National Academy of Sciences: productivity, economics, environment, and community well-being.

In their paper published on 3 February in the journal [Nature](#), John Reganold and Jonathan Wachter, agronomists at Washington State University, argued that that yields from organic farms were indeed between 8% and 25% lower than those of conventional farms, depending on the crop. With effective use of organic polyculture, however, this gap narrowed to 9%, and with increased crop rotation it shrank to just 8%.

But one area where organic farming trumped conventional methods is in periods of severe drought; a phenomenon set to become increasingly common as the global climate is disrupted. The authors argue that the weight of evidence argues that yields from organic

farms are more reliable in periods of drought because their healthier soil retains more moisture (as perfectly described previously by [Bhaskar Save](#), based on his many decades of organic farming in India).

It is also noted that organic farmers often make a better living than their pesticide-spraying colleagues, with revenues between [22% and 35% higher](#). The two agronomists state that humanity's conversion to organic farming should not rest solely on the question of yields by noting that wider issues must be addressed as well:

We should also reduce food waste, improve access to food distribution, stabilise the global population, eliminate the conversion of crops into biofuels and adopt a more plant-based diet.

The authors also say that the downsides of conventional farming are clear: it uses costly pesticides, pollutes water with nitrates and phosphates, causes high greenhouse gas emissions and reduces biodiversity on cultivated land. As well as contributing to a variety of chronic diseases, conventional farming methods also produce food with lower nutritional values than organic methods; a finding supported by 12 of the 15 studies identified by the researchers on this subject.

Numerous studies in the review indicated that organic farms tend to store more soil carbon, have better soil quality, and reduce soil erosion. Organic agriculture also creates less soil and water pollution and lower greenhouse gas emissions. And it is more energy efficient because it doesn't rely on synthetic fertilizers or pesticides. It is also associated with greater biodiversity of plants, animals, insects and microbes as well as genetic diversity. Biodiversity increases the services that nature provides like pollination and improves the ability of farming systems to adapt to changing conditions.

In terms of the social impact of the two farming methods, organic farming also came out on top: organic farms create more jobs, are less damaging to their employees' health and actually improve their diet, promote interaction between producers and consumers and provide better conditions for animals.

Reganold concludes.

Hundreds of scientific studies now demonstrate that organic farming should play a greater role in feeding our planet. 30 years ago, there were only a handful of studies comparing organic and conventional agriculture. In the last 15 years their number has massively increased.

Of course, it is conceivable that, given breakthroughs in non-GM biotechnology, not least [marker assisted selection](#), systems of agriculture based on organic techniques will in future narrow the gap further or even outperform petro-chemical intensive farming.

This latest research follows on from other recent studies that puts paid to the claim that organic-based farming is a kitchen table niche incapable of playing a major, dominant role in feeding the world. For example, we now have:

1. The Rodale Institute's [30-year research trial](#) into organic farming, which concludes that organic yields match conventional yields, outperform

conventional in years of drought and actually build soil fertility rather than deplete it. In addition, there is also [this study](#) from 2014, that indicated the gap between organic and chemical-intensive models is not so great (even absent in many cases) and that organic could produce enough to feed the world.

2. Last year's [Oakland Institute findings](#) that demonstrated the "tremendous success" of agro-ecology across Africa. The Oakland Institute presented 33 case studies that were successful in combining sound ecological management, including minimising the use of toxic inputs by using on-farm renewable resources and privileging endogenous solutions to manage pests and disease, with an approach that upholds and secures farmers' livelihoods. The research provides irrefutable data and information how agricultural transformation can yield immense economic, social, and food security benefits, while ensuring climate justice and restoring soils and the environment. Frederic Mousseau, Policy Director of the Oakland Institute, coordinated the research and argued that the research debunks the myths about the inability of agro-ecology to deliver and highlights the multiple benefits of agro-ecology, including affordable and sustainable ways to boost agricultural yields while increasing farmers' incomes, food security and resilience.
3. Reports from Tamil Nadu (South India) on women's collectives organising to restore traditional foods and farming methods, resulting in lower costs, higher yields and improved nutrition. [By practising agro-ecology](#), an increasing number of women farmers are now free from chemical fertilisers and pesticides and grow many crops together - grains, lentils, beans, oilseeds - to create biodiversity, using maximum input from the land within the farm to produce food.
4. A [peer-reviewed study](#) in the British Journal of Nutrition showing that organic crops and crop-based foods are between 18 to 69% higher in a number of key antioxidants such as polyphenolics than conventionally-grown crops. Moreover, significantly lower levels of a range of toxic heavy metals were found in organic crops. For instance, cadmium is one of only three metal contaminants, along with lead and mercury, for which the European Commission has set maximum permitted contamination levels in food. It was found to be almost 50% lower in organic crops. Nitrogen concentrations were also found to be significantly lower in organic crops. Concentrations of total nitrogen were 10%, nitrate 30% and nitrite 87% lower in organic compared to conventional crops. The study also found that pesticide residues were four times more likely to be found in conventional crops than organic ones. The study is the biggest of its kind ever undertaken. The international team of experts led by Newcastle University in the UK analysed 343 studies into the compositional differences between organic and conventional crops.
5. Various studies indicating the [superior nutritional value](#) of organic food, while pesticide-dependent chemical-intensive agriculture has led to [soil degradation](#), [mineral-deficient soils](#), [de-nutified food](#), [poisoned water](#) and a range of [health problems and diseases](#).

From [Cuba](#) to [Uganda](#), there are of course many more examples that could be added to the above list to highlight the successes of agricultural systems based on organic. The point is that organic agriculture could feed the world, certainly if it were to be prioritised and invested in to the extent green revolution technology has been over the decades.

The ability to feed the world, however, involves a lot more than focussing on organic vs

chemical or a bogus technical quick-fix GM solution that [rides on the back of successes](#) in conventional breeding.

The geopolitics of food and agriculture has played a [significant role in](#) creating food-rich and food-deficit regions and populations. Any serious commitment to feeding the world must therefore address various issues, not least [international trade policies](#) and the globalised system of 'capitalism' that has led to, for example: [structural inequality and poverty](#); the [privatisation of](#) seed, knowledge, land and water; the [marginalisation of smallholders](#), the [backbone](#) of global food production; [commodity speculation](#), resulting in food shortages; and [debt and export-oriented](#) agriculture, which undermine local, rural economies.

The corporate-controlled green revolution ushered in by the oil-rich Rockefeller clan and its associates was aimed at uprooting indigenous agriculture. The ultimate beneficiaries have been powerful oil, financial and agribusiness players. All of this to fuel a 'nine-day wonder' ([Gandhi's term](#)) unsustainable model of economic and social 'development' and an urban-centric model of agriculture based on destroying livelihoods in the Global South, as is currently happening [in India](#).

The solution must be for policy-makers to prioritise a shift towards organic-based systems of agriculture and, importantly, to restore soils back to a healthy level. This would involve providing support to an agro-ecology movement that is empowering to people politically, socially and economically, and implementing an economic system that is based on local self-reliance and a commitment to rejecting meaningless over-consumption that strips the environment bare.

When Raj Patel [discusses the perceived successes](#) of the green revolution, he urges us to consider what could have happened if we had invested in and prioritised alternative approaches to agriculture – if we had pursued a different route than that of the green revolution. It is only then that we could genuinely measure its efficacy.

However, such a consideration is to be side-lined by pro-GM lobbyists like Shanthu Shantharam or former UK environment minister Owen Paterson, who claims “billions” will be condemned to hunger and poverty if we do not keep with green revolution technology and extend it by adopting GM. For like all good [neo-liberal GMO corporate evangelists](#), Paterson's mantra of TINA (there is no alternative) is the kind of rhetoric that is designed to stop thinking and informed analysis dead in its tracks.

But ultimately, as alluded to in this piece and something that the likes of Shantharam, Trewavas or Paterson do not want to hear, the real issue isn't about whether or not organic can feed the world, it is that global capitalism is preventing us from doing so and will continue to do so if its structures and impacts remain unchallenged.

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Articles by: [Colin Todhunter](#)

About the author:

Colin Todhunter is an extensively published independent writer and former social policy researcher. Originally from the UK, he has spent many years in India. His website is www.colintodhunter.com
https://twitter.com/colin_todhunter

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