

Green New Deal: Too Much Old Grey

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*The notion of a 'Green New Deal' is receiving considerable support. It has been reflected in the formation of a **Global Alliance for a Green New Deal**, its statement representative of what is being variously proposed around the world. This paper takes the Alliance as a case study, arguing that 'Green New Dealism' still does not get to grips with the breadth and depth of the ecological crunch.*



Summary

- The Global Alliance for a Green New Deal 'package' is certainly better than conventional development strategies but remains significantly flawed in many ways.
- The fundamental issue of growth, including its population component, is badly addressed.
- Far too much is expected of 'alternative' technologies, including renewable energy sources.
- Too much is blamed solely on the 'Rich North' / 'White West'.
- Similarly, too much blame is attached to the financial sector, ignoring the unsustainable burden of the 'real economy' of production and consumption.
- The threat from the 'tragedy of the commons' is evaded while there is unwarranted silence on the menace of human numbers.
- Overall, the "Deal" fails to recognise the need for quite substantial overall degrowth to a steady-state economy in dynamic balance with the rest of nature.

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1. Introduction

The **Global Alliance for a Green New Deal** (GAGND) pulls together a lot of the strands of the various Green New Deals that have been proposed in many quarters, including, now, sections of mainstream political parties.² Prominent supports of the idea include, in the USA, Bernie Sanders and Alexandra Ocasio-Cortez, while, in the UK, MPs Caroline Lucas (Green Party) and Clive Lewis (Labour) have been to the fore. The slogan of a 'Green New Deal' is widely repeated in so-called 'Citizens Assemblies' and indeed in many other quarters.

When set against 'business-as-usual' policies and goals, the GAGND is still another case of 'cakeism', the belief that we can have our cake and eat it. It calls a lengthy list of social goals to be delivered whilst still living safely within 'planetary boundaries'.³ Sadly, the Declaration and the material available on the GAGND website suggest a case of 'pie-in-the-sky' thinking.

Though there is a general recognition of the seriousness of the climate emergency and some other threats, it still feels as if there is a very dangerous underestimation of the breadth and depth of the 'sustainability crisis' and of the speed at which things could suddenly unravel.⁴ It is vital to remember that tipping points can suddenly and unexpectedly be crossed. It is, then, vital to leave plenty of 'headroom'.⁵

Systems break at their weakest link and small changes can create far greater impacts than anticipated. For example, Richard Heinberg has shown how a small hike in petrol prices caused a significant number of mortgage defaults which in turn set in motion the falling financial dominoes of the 2008 economic crisis.⁶

Sometimes, a New Deal is rephrased as a 'Green Recovery' or, much more conventionally, 'Build Back Better'. Actually, the latter is not totally unrelated since, as will be argued below, a Green New Deal, as widely conceived, would indeed require a great deal of construction work. Indeed, the same is true of the 17 United Nations Sustainable Development Goals.⁷



² <https://www.globalgreennewdeal.org>

³ <https://news.mongabay.com/2021/03/the-nine-boundaries-humanity-must-respect-to-keep-the-planet-habitable/>

<http://www.igbp.net/globalchange/greatacceleration.4.1b8ae20512db692f2a680001630.html>

<https://www.semanticscholar.org/paper/The-contradiction-of-the-sustainable-development-on-Hickel/37e58342e41b9bcbd5dc7f631514f9e44a5a3db>

⁴ <https://www.wiley.com/en-gb/How+Everything+Can+Collapse%3A+A+Manual+for+our+Times-p-9781509541393>

<https://www.theguardian.com/cities/2018/mar/22/collapse-civilisation-near-certain-decades-population-bomb-paul-ehrlich>

<https://www.theguardian.com/environment/2020/dec/06/a-warning-on-climate-and-the-risk-of-societal-collapse>

<https://www.vox.com/future-perfect/2018/10/18/17886974/science-technology-climate-change-existential-threats-martin-rees>

⁵ https://www.researchgate.net/publication/227320451_Human_population_as_a_dynamic_factor_in_environmental_degradation

⁶ <https://richardheinberg.com/bookshelf/the-end-of-growth-book>

⁷ <https://sdgs.un.org/goals>

2. The Green New Deal Package

There are many definitions of a 'Green New Deal' and associated policies.⁸ All, however, seem to be variants of a 'turquoise Keynesianism', underpinned by exaggerated hopes regarding what can be sustainably delivered by a variety of primarily technological fixes and economic reforms. They include:

- large-scale technological innovation, not least in the fields of renewable energy,⁹ battery storage,¹⁰ super-grids and electrification of the transport system, part and parcel of a general 'decarbonisation',
- efficiency gains on a major scale,¹¹
- a "circular economy", via comprehensive schemes for repair, reuse and recycling,
- urban regeneration, including the harnessing of information and communication technologies, sometimes under headings such as 'smart cities' and 'connectivity',
- financial 'pump-priming' in the form of 'green quantitative easing',¹²
- debt relief and
- wide-ranging "technology transfers".

8 Eg <https://thepracticalutopian.ca/2019/09/27/ten-green-new-deals-how-do-they-compare/>

9 Myth of abundant and easily tapped renewable energy:

<https://www.mdpi.com/1996-1073/14/15/4508>

<https://www.pnas.org/content/114/26/6722>

<https://foreignpolicy.com/2019/09/06/the-path-to-clean-energy-will-be-very-dirty-climate-change-renewables/>

<https://www.sciencedirect.com/science/article/abs/pii/S1364032117304720>

<https://www.sciencedirect.com/science/article/abs/pii/S1364032113005807?via%3Dihub>

<https://www.sciencedirect.com/science/article/abs/pii/S0301421514002833?via%3Dihub>

https://communemag.com/between-the-devil-and-the-green-new-deal/?fbclid=IwAR1aD0lVDqL-hwIxlDuBmsNBzrWM3OmhCP00eFVNzfW0jStdPT_NHbBf9E

The critical issue of energy return on energy invested is often ignored. See:

<https://nyaspubs.onlinelibrary.wiley.com/doi/abs/10.1111/j.1749-6632.2009.05282.x>

<https://www.nature.com/articles/s41560-018-0116-1>

See the work of Ted Trainer on the limits to renewables, key ones being available here:

<https://www.fishpond.co.uk/Books/Simpler-Way-Samuel-Alexander-Edited-by-Jonathan-Rutherford-Edited-by/9780994282873>

The point is not to write off all renewable energy technologies. It is that (some) renewable sources are only sustainable in the context of a decentralised, thoroughly democratic and much small scale society.

10 Batteries:

<https://www.wired.co.uk/article/lithium-batteries-environment-impact>

https://earth.org/data_visualization/are-lithium-ion-batteries-compatible-with-a-sustainable-future/

<https://energyskeptic.com/2015/making-the-most-energy-dense-battery-from-the-palette-of-the-periodic-table/>

<https://thewalrus.ca/the-hidden-cost-of-rechargeable-batteries/>

There are alternatives possibly in the pipeline and perhaps battery recycling facilities might spread. But the issue is what is happening now, not what might happen in the future and, in all likelihood, at a date that might be too late.

With regard to just the CO2 dimension, ie not the mining impacts nor disposal parts of the battery life cycle:

https://www.transportenvironment.org/sites/te/files/publications/2019_11_Analysis_CO2_footprint_lithium-ion_batteries.pdf

11

https://books.google.rw/books/about/The_Jevons_Paradox_and_the_Myth_of_Resou.html?hl=no&id=nfHDSsqi4NQC

<http://links.org.au/node/1217>

https://www.google.co.uk/books/edition/The_Efficiency_Trap/6NbUAgAAQBAJ?hl=en&gbpv=0

https://www.researchgate.net/publication/339018382_The_limits_of_energy_sufficiency_A_review_of_the_evidence_for_rebound_effects_and_negative_spillovers_from_behavioural_change

<https://www.palgrave.com/gp/book/9780230525344>

<http://www.simplicityinstitute.org/wp-content/uploads/2011/04/LimitsOfTechnologyTrainer.pdf>

Efficiency drives have also made many workplaces appalling places to work. This remains a classic study:

https://monthlyreview.org/product/labor_and_monopoly_capital/

There is no point in making what some have called 'batshit' and 'bullshit' jobs just more productive:

<https://www.opendemocracy.net/en/opendemocracyuk/batshit-jobs-no-one-should-have-to-destroy-the-planet-to-make-a-living/>

12 For a flavour, try: <http://www.financeforthefuture.com/GreenQuEasing.pdf>



A city-based vertical farm using robots

More radical versions of a Green New Deal include transformations in food production such as proposals for 'regenerative' farming¹³, (alternatively, 'permaculture') and for the creation of urban 'vertical farms'.¹⁴ The gargantuan scale of food waste¹⁵ is quite rightly attacked and rightly so, though there is general circumspection about action urgently needed to encourage a huge reduction in meat consumption (a major source of edible food loss and many other ills).

Many organisations, of course, advocate massive tree planting as well (appropriate species in appropriate places, of course!).¹⁶ There are indeed many gains to be made by reforestation, including urban trees as in the big programme in cities such as Milan.¹⁷



¹³ Once again, some of the hopes here may turn out to be wishful thinking eg

<https://www.quantamagazine.org/a-soil-science-revolution-upends-plans-to-fight-climate-change-20210727/>

¹⁴ Eg <https://www.towerfarms.com/us/en/possibilities/urban-farming>

The energy and water costs of such schemes may prove a barrier to significant expansion. For possible limitations, see, for example:

<https://globalecoguy.org/no-vertical-farms-wont-feed-the-world-5313e3e961c0>

https://www.salon.com/2016/02/17/enough_with_the_vertical_farming_partner/

<https://www.wired.com/story/why-some-ecologists-worry-about-rooftop-honey-bee-programs/?fbclid=IwAR35KsaUZjl1-rrQc-67usNaWYUJRe-ZgJHdWwrcbH2gsxU4aZhUZ3PWROU>

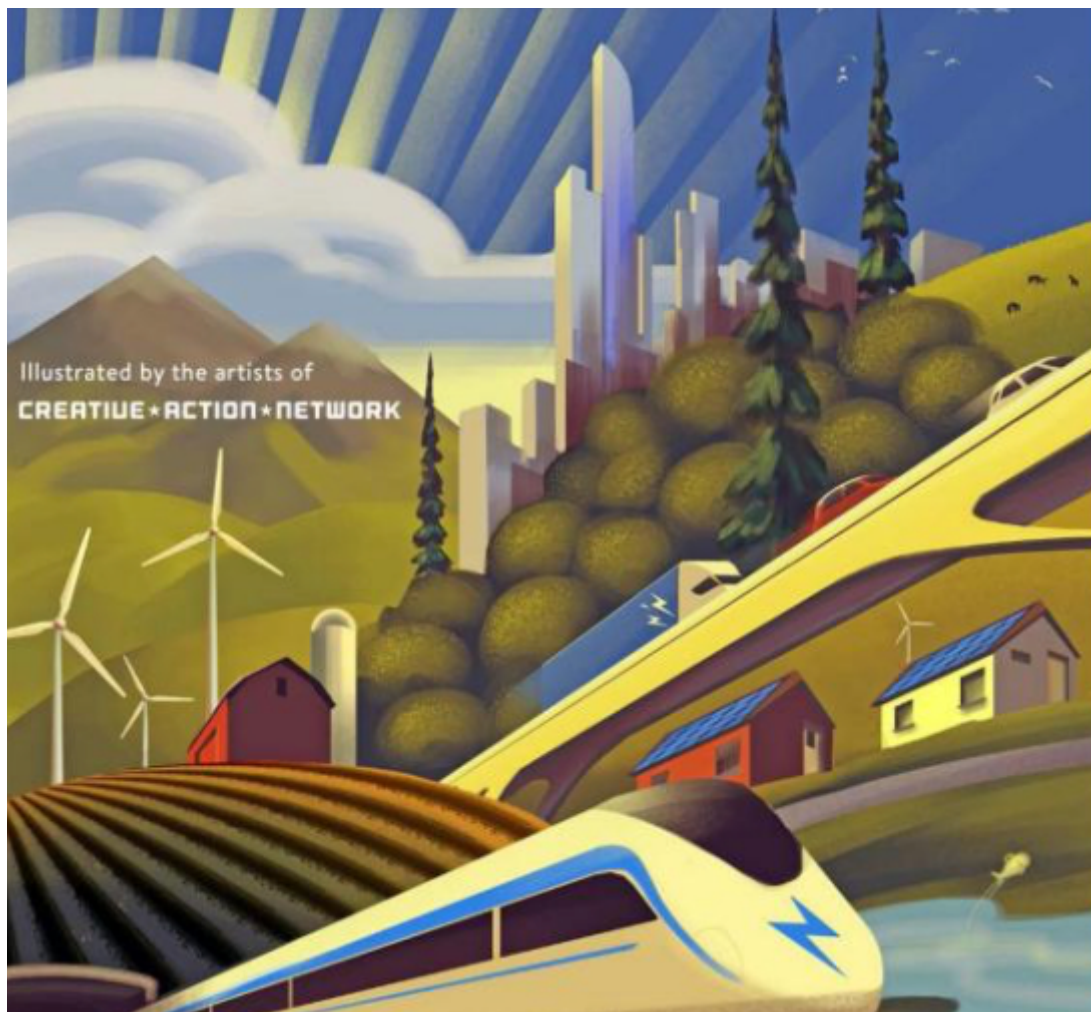
<https://www.theguardian.com/sustainable-business/2015/apr/10/indoor-farming-makes-no-economic-environmental-sense>

It might be just the author's finickity tastes but hydroponic food (tomatoes being a common example) is usually unpleasantly watery and flavourless.

¹⁵ <https://www.sciencedirect.com/science/article/pii/S2352550920314202>

¹⁶ Once again, we need a dose of realism eg <https://www.bloomberg.com/news/features/2021-07-30/what-happens-after-pledges-to-plant-millions-of-trees> Moreover habitats such as wetlands, mangroves and sea grasses should not be overlooked in the (welcome) enthusiasm to protect established trees and plant new ones.

¹⁷ <https://www.dezeen.com/2021/09/24/forestami-project-trees-planted-milan/>



*This poster from the **Creative Action Network** illustrates both common elements of most 'Green New Dealism' (eg renewable energy in the form of wind turbines) but also possible differences such as the suggestion of on-going large-scale, high-speed transportation and skyscraper cities.*

3. Blind spots

To be sure, there are many good ideas within most GND packages of policy proposals. Green New Dealers certainly deserve credit for pushing them to the fore. Yet, overall, there is still a failure to get to grips with the extent of human ‘overshoot’ and, more specifically, the limitations and other drawbacks inherent in particular measures advocated in GND circles (and, commonly, at events such as ‘Citizens Assemblies’). Before examining particular obstacles, it might be worth speculating why there is such a widespread unwillingness to ‘think shrink’ and accept the need for considerable physical degrowth in the total human enterprise.

Perhaps part of the problem is that certain words and terms have become *buzz words*, used in ways that present them as unproblematic desiderata. Examples include *renewable* energy, *clean* technology, *organic* farming, food *security*, *public* transport, *welfare* spending, *participatory* decision-making, digital *transformations*, *smart* planning, *open* borders/*freedom* of movement, *people-centred* development and recovery (for the public) of (enclosed) *commons*.

Similarly, warm-sounding words such as ‘inclusivity’, ‘empowerment’, ‘rights’, ‘justice’, ‘reparations’, and ‘decolonisation’ are part of the GND discourse, ones that tend to discourage closer scrutiny. Presumably those attending Citizens Assemblies and other such consultations and meetings are drawn to such policies by the cheerful glow that surrounds the terminology.

There is little consideration given to possible trade-offs and in-built disadvantages. This language has the advantage of sounding so positive, free from doom and gloom (what Caroline Lucas MP once attacked as the “scary agenda”).¹⁸ An example is the popular argument that we can easily create “one million carbon jobs”.¹⁹ What decent person could be against that! ‘Renewability’ also sounds so self-evidently desirable. Even fossil fuel corporations will argue that they offer a bridge to a renewable energy future. No-one openly advocates *stupid* planning, food *insecurity*, fuel *poverty*, or *dirty* growth.

Conversely, other terms have become ‘*boo words*’, ipso facto very bad things (“globalisation”, “big business”, “capital”, “market forces”, the “1%”, even “the state”). There is often many a good point being made in such a discourse. The problem is that it leads to neglect of other negative factors, sometimes more important ones, that are also at work (most of all, what, below, will be called the ‘tyranny of commonplace decisions’). Terms such as ‘limits to growth’ sound, er, limiting, vexatious restrictions on the human ‘journey’. ‘Population policy’ is often equated with fundamental violations of human rights, often just dismissed as ‘neo-Malthusianism’ or, worse, ‘eco-fascism’.²⁰ What civilised person could be for that?

With particular respect to energy and food policy, there are specific blind spots. In the first case, there is a tendency to think solely in terms of just energy supply, an ‘energy reductionism’. Yet more energy production must mean less of something else. That reality is lost in a blizzard of statistics about what renewable energy sources could supply, if unleashed. Ecological, logistical, financial and other barriers melt away in the face of the glowing promise of a renewable energy revolution.

Similarly, the notion of enough food for all (that ‘all’ given no numbers) depends on a parallel tendency to think in terms of just one compartmentalised variable that can be maximised without unsustainable penalties (the so-called ‘food first’ platform is discussed in more detail below). In all such matters, most of all in the case of the energy sector, there is a tendency to confuse what Nicholas Georgescu-Roegen called “recipes”, ie still theoretical possibilities, with “viable technologies”, ie actual or readily deployed technology.²¹

¹⁸ <https://www.theguardian.com/politics/2009/may/18/interview-caroline-lucas-green-party>

¹⁹ Eg <https://www.campaigncc.org/climatejobs>

²⁰ <https://sandyirvineblog.files.wordpress.com/2016/05/malthus-and-modern-times.pdf>

²¹ http://www.georgescu-roegen.org/wp-content/uploads/2016/10/1984_Feasible-recipes-ViableTechnologies.pdf, pp29-30

4. Social justice agenda

Perhaps there is another source of myopia regarding the all-embracing nature of the ecological crunch. Sometimes, it leads to straightforward denial, as in the case of overpopulation, but at other times, just evasion of difficult choices. It stems from an overriding commitment of many Green New Dealers to a 'social justice' agenda based on 'diversity, equality and inclusivity'. These terms also have, of course, a very positive ring for many, even though they can mean very different and indeed quite incompatible things to different people.

The agenda seems to be filled with a seemingly ever-lengthening list of personal rights.²² Environmental protection and socio-economic improvement (usually expressed as long lists of citizen entitlements)²³ seemed to be regarded some sort of twin track, necessarily going hand in hand. Typical of this thinking is the belief that "global economic justice" must at the centre of the agenda. In this respect, Green New Dealism is heir to the notion of 'sustainable development', commonly associated with the World Commission on Environment and Development and the 'Brundtland Report' (ie environmental protection *and* social progress)

There is an indiscriminating universalism that does not ask what the generalisation of a long list of rights to everyone on the planet might actually mean for the Earth itself (let alone all the other species that depend on it).²⁴ A certain cultural relativism also leads to avoidance of questions about the compatibility of certain local cultures and associated practices with wildlife conservation (and some fundamental human rights, on which there is more discussion later).



In many GND circles (and now those of 'intersectionality'), such goals seemingly trump all other considerations (tensions between them will be discussed later). These ideas are reflected in widespread use of terms such as 'climate justice'. Yet a 'DEI' agenda, however implemented, still requires physical underwriting by energy and material resources as well as simple physical space. 'Social justice' policies have, in other words, have to be based on a sustainable ecology, yet, such is the commitment to the former, that, generally, ecological constraints are not given sufficient recognition. Forgotten is Oscar Wilde's maxim: "when the gods wish to punish us, they answer our prayers".

In particular, the argument that the 'poor will suffer' because of this or that necessary measure suffices to have removed it from the agenda. Perhaps the most critical instance is the

²² Two common examples are a right to free university education and to internet access. It is even possible to read of a right to be fat (sometimes linked to attacks on 'health fascism') or to be born deaf. Some even link this tendency to proclaim more and more rights to an epidemic of narcissism eg <http://www.jeantwenge.com/the-narcissism-epidemic-book-by-dr-jean-twenge/>

Back in the 1970s, Tom Wolfe had identified what he called the 'Me Decade'. On this culture of entitlement, see: <https://www.simonandschuster.co.uk/books/The-Age-of-Absurdity/Michael-Foley/9781847396273>

²³ The author once spoke at a conference of Green MEPs during which another speaker proclaimed the existence of 67 such rights (sic, not 66 nor 68 but 67 exactly). Needless to say, no ecological costing was given.

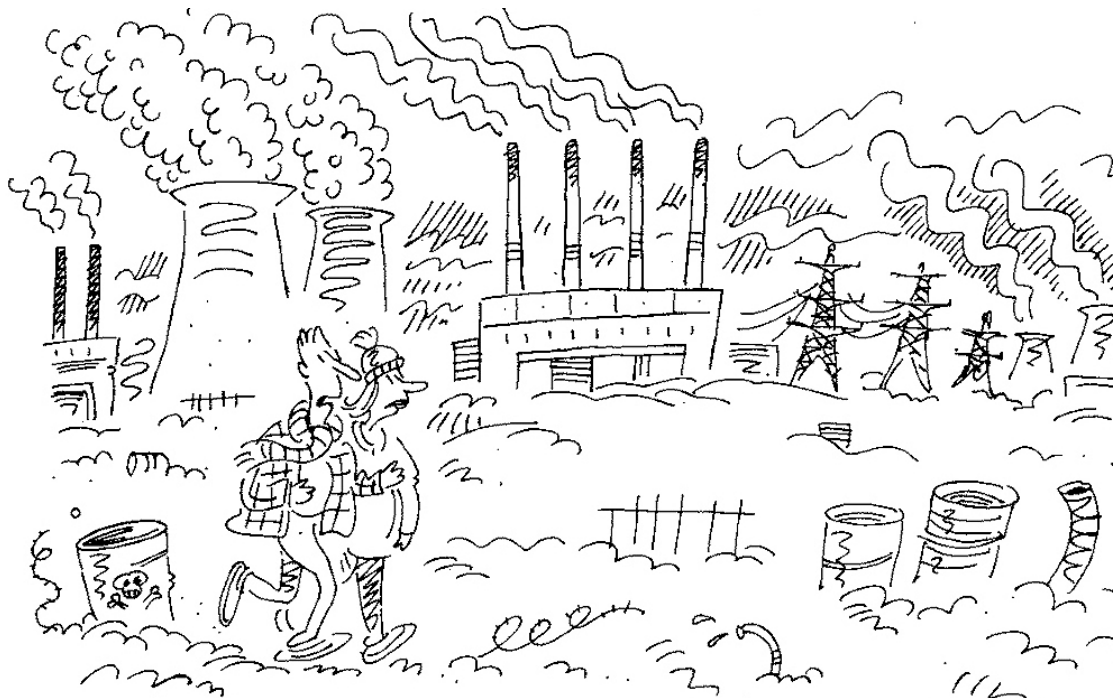
²⁴ Cf https://www.garretthardinsociety.org/articles/art_limited_world_limited_rights.html

case of energy prices. The comparatively low price of energy is what facilitates the on-going destruction of the Earth. Large-scale deforestation, giant mines, 'factory farms', vast trawler fleets on distant seas, automated production lines, high volume transport movements, 'just-in time' deliveries, 'long haul' holidays, information and communication technologies ('a computer on every desk!'), suburban sprawl stretching to the horizon... all depend on cheap energy.

In reality, the basic way to make all such things more sustainable is to push up energy prices so they begin to reflect their real costs (depletion, degradation, pollution, human ill health, social dislocation, and other 'externalities'). In turn it would make more sustainable options comparatively cheaper and more attractive (eg a free range egg vs a 'factory farm' one)²⁵. But here comes the killer²⁶: higher energy prices would hurt the poor (there are many other instances eg opposition to water metering). That often seems to be the end of the matter.

The alternative — enabling people to live comfortably and safely on less (publicly funded home insulation etc) to ease the transition to ecologically appropriate resource prices — does not get the necessary prioritisation. Tragically, it is also the option that would create more jobs by making machines more expensive than people.

Green New Dealers resolve such conundrums by placing their faith in a variety of technological 'fixes' that will reduce, even remove, the need to make unpleasant choices.



"Our identity group's grievances must come first"

²⁵ <https://theconversation.com/revealed-true-cost-of-britains-addiction-to-factory-farmed-chicken-158555>

5. No Green Technofixes

Some of the ideas found under the Green New Deal umbrella are actually based on pure nonsense, in particular the thermodynamically impossible 100% 'circular economy'.²⁶ Certainly, we must try to optimise strategies for repair, reuse and recycling. But two other activities are far more important: reduction and refusal (ie less consumption and non-production/use). The focus must be far more on big decreases in inputs into the economy, not better management of its outputs and waste side-products. There also seems to be an assumption in some circles, not least the UK Labour Party and US Democrats, of the possibility for radical 'dematerialisation' and *absolute* 'decoupling', for which there is simply no evidence.²⁷

The notion that renewable energy sources such as wind, tidal and solar power could power anything remotely like current society is also a fantasy. Indeed some such as large biomass energy, giant solar power towers, big HEP dams and large tidal barriers do more harm than good, including in some cases generation of significant quantities of greenhouse gases, either in construction (large-scale use of concrete) and operation (HEP reservoirs in tropical area).²⁸ All current renewable energy systems actually depend on fossil fuels for the manufacture and installation.

There are many other negative impacts. In the case of HEP, they include land take, loss of farmland and wildlife habitat and degradation of river systems. Sometimes, huge numbers of people are forced to move. Of course fossil fuel production and consumption is far, far worse than most 'renewables': the point is that there are no free energy lunches and genuinely sustainable renewable energy production will only cater for quite limited demand.

Optimistic estimate of the potential of renewables sometimes use seemingly impressive growth rates in their deployment, ignoring the small starting base and their still low contribution in several sectors. Some seemingly figures include sources such as biomass monocultures, scarcely a sustainable option. It is a large part of EU 'renewables', for example.²⁹ Biomass energy can take many forms but most are very damaging and some ruinous, even just in carbon emission terms.³⁰

Part of this misleading picture is a common conflation of electricity supply with total energy consumption. This is not only wrong at a general level but also underplays specific barriers in

²⁶ <https://www.resilience.org/stories/2018-11-12/how-circular-is-the-circular-economy/> ;
<https://un-denial.com/2018/04/18/by-paul-mobbs-the-2nd-law-of-thermodynamics-the-gaping-hole-in-the-middle-of-the-circular-economy/> ;
<https://steadystate.org/a-journey-of-no-return-not-a-circular-economy/>
<https://journals.openedition.org/sapiens/906>
https://www.treehugger.com/new-report-confirms-recycling-is-bs-5077719?utm_campaign=treehugger&utm_medium=email&utm_source=cn_nl&utm_content=21507669&utm_term=&fbclid=IwAR2wZxfzq5Ku5ziG1sR40zeywJr2l_Osij8rBY1K5zS8XG5Zz1Dw5tV6CT0 ;
https://theconversation.com/recycling-isnt-enough-the-worlds-plastic-pollution-crisis-is-only-getting-worse-144175?fbclid=IwAR2eYJrx9jvT2SxRmum-WAJdx-A6aGMUk56IEYW-XmyR9hFu_MJBwTgNrkl ;
http://irep.ntu.ac.uk/id/eprint/24666/1/201125_7266%20Cooper%20Publisher.pdf

²⁷ <https://eeb.org/library/decoupling-debunked/>
<https://iopscience.iop.org/article/10.1088/1748-9326/ab842a>
<https://www.resilience.org/stories/2020-07-15/green-economic-growth-is-an-article-of-faith-devoid-of-scientific-evidence/>
https://www.researchgate.net/publication/248493318_The_de-materialisation_myth
https://scholar.google.co.uk/citations?view_op=view_citation&hl=en&user=PBZnO2oAAAAJ&citation_for_view=PBZnO2oAAAAJ:9yKSN-GCB0IC ;
<https://royalsocietypublishing.org/doi/10.1098/rsta.2016.0383>

²⁸ <https://www.theguardian.com/global-development/2016/nov/14/hydroelectric-dams-emit-billion-tonnes-greenhouse-gas-methane-study-climate-change>

²⁹ <https://publications.jrc.ec.europa.eu/repository/handle/JRC109354>

³⁰ <https://news.sky.com/story/climate-change-draxs-renewable-energy-plant-is-uks-biggest-co2-emitter-analysis-claims-12428130>

fields such as agriculture and transportation.³¹ Overall, renewable energy is only adding to total energy consumption with very limited, if any, displacement of fossil fuels.

Assorted Green New Deals will involve a lot of infrastructure and other construction work from tidal wave barrage walls to pylon lines. It is likely to cause immense ecological damage. There will be further encroachment on wildlife habitat and farmland as well as via huge consumption the concrete and steel, arguably the two most destructive materials on the planet.³²

As just noted, many eco-crises could grow worse even if we created a “low carbon economy” unless more radical and comprehensive steps are taken. Low carbon technologies could still facilitate very destructive activities.³³ Indeed, some allegedly ‘low carbon’ fixes such as HEP, electrification of the *current* vehicle fleet (an estimated 1.4 billion motor vehicles and fast growing), biomass energy and nuclear power (yes, yet another ‘new generation’ that will overcome intractable past problems) merely take us out of the proverbial frying pan of global overheating into the fires of other forms of ecological meltdown.

Meanwhile, there are those who claim to have found a bridge to a low carbon economy in the form of Bioenergy combined with Carbon Capture and Storage (BECCS).³⁴ Then, there are the snake oil sellers of a ‘hydrogen economy’, a rather tired old dream and one that makes little more sense today (except as a ‘green hydrogen’ backup system in places) than when this fix was first announced.³⁵ It might be wondered that, in some Green New Deal circles, there might be the odd enthusiast for small modular nuclear power plants and perhaps a few more believers that fusion power breakthroughs lie just around the corner (as they always seem to do!).

At the same time, it must be stressed that current renewable energy devices depend on fossil fuels for their fabrication and installation, thereby bringing a carbon price tag (as well as many others). Indeed, renewable energy production has scarcely displaced that from fossil fuels, only adding to total energy consumption. There seems to be a failure by many GAGND advocates to distinguish the seemingly huge amount of solar radiation reaching the Earth’s surface with its actual harvestability and what might be delivered to end users in a steady and

³¹ <https://energyskeptic.com/category/energy/an-overview/>

³² <https://www.theguardian.com/cities/2019/feb/25/concrete-the-most-destructive-material-on-earth>
https://www.treehugger.com/steel-industry-responsible-for-11-of-carbon-emissions-5191639?utm_campaign=treehugger&utm_medium=email&utm_source=cn_nl&utm_content=24387048&utm_term&fbclid=IwAR3HhrYI_acDzdTy2aCyLwIVj1NbypYpkI3KdzpcpNkj8Dcy_dgoGyRj8ro

³³ Eg <https://www.bbc.co.uk/news/business-59576867?fbclid=IwAR11i3IZ4PUklRw25zgiWSJ1SSqa90KV1FFKc9oh91WkdWZY8s3sGKSyTgQ>

³⁴ <https://corporatewatch.org/product/technofixes-a-critical-guide-to-climate-change-technologies/>

See also:

https://www.fern.org/fileadmin/uploads/fern/Documents/2021/Six_problems_with_BECCS.pdf

<http://www.biofuelwatch.org.uk/2015/beccs-report/>

<https://www.carbonbrief.org/guest-post-why-beccs-might-not-produce-negative-emissions-after-all>

<https://www.oneearth.org/beccs-no-time-for-false-saviours/>

<https://research.american.edu/carbonremoval/2019/11/13/jacobson-mark-2019-why-carbon-capture-and-direct-air-capture-cause-more-damage-than-good-to-climate-and-health/>

<https://www.dailyclimate.org/carbon-capture-2653860712.html?fbclid=IwAR1Y9p6BEXFVlakzgfWEbtFYc45feSsWQy9RizQpzy9p7Ot9vIz79GOkqQ>

³⁵ <https://www.resilience.org/stories/2021-05-21/a-concise-history-of-the-concept-of-hydrogen-economy/>

On hydrogen hype, see:

<https://energyskeptic.com/2019/hydrogen/>

<https://www.resilience.org/stories/2005-03-01/hydrogen-economy-energy-and-economic-black-hole/>

<https://www.resilience.org/stories/2006-01-03/myth-hydrogen-economy/>

<https://issues.org/romm-hydrogen-clean-energy/>

https://link.springer.com/chapter/10.1007%2F978-1-4020-5549-2_6

http://www.econogics.com/en/lfee_mit_edu_features_hydrogen_vehicles.pdf

<https://www.iuniverse.com/BookStore/BookDetails/126185-The-Emperor-s-New-Hydrogen-Economy>

<http://www.energycrisis.com/hydrogen/crea.htm>

<http://euanmearns.com/the-hydrogen-economy-more-green-mythology/>

<https://www.thenewatlantis.com/publications/the-hydrogen-hoax>

large-scale quantity and in the form needed (eg high temperature heat for certain industrial processes).

The GAGND has, quite rightly, some harsh words for the big banks, the IMF and the World Bank. To be sure, they are literally and metaphorically banking on disaster, such are the ruinous projects they underwrite. Yet, even though the financial sector may push economic activity in certain malign directions, it basically just oils the wheels of the total economy. That rests on primary production, manufacturing, transport and retail, all ultimately driven by consumer demand.

Bashing the bankers only takes us so far. It might be remembered that many civilisations in the past, with nothing remotely like today's financial systems, still managed to commit ecological suicide. Examples range from SE Asia through what used to be called the 'Fertile Crescent' in the Middle East to Central America. Indeed 'moneyless' societies managed to drive several species into extinction and deforest big areas.³⁶

The worst environmental and humanitarian disasters of the 20th century took place in countries where there were no stock exchanges, no private banks, nor financial 'instruments' such as credit default swaps, Maoist China being arguably the worst instance, followed by the USSR and the brutal dictatorships in Eastern Europe. The fundamental problem, then, is not what the GAGND calls 'predatory finance' but the very scale of the economy.



The campaign to wipe out sparrows in Communist China.

It should be noted that the original New Deal did not deal with the problems it claimed to address. The then unemployment crisis in the USA persisted at a high level until the rearmament programme kicked in. Roosevelt's New Deal also inflicted severe ecological damage (dams etc) alongside, to be fair, some beneficial programmes of soil conservation and tree planting.

6. The rate and magnitude challenge.

Whatever the other limits there might be proposed technological 'solution', be it 'green hydrogen' or new buildings constructed to Passivhaus standards, there is always remains the rate and magnitude challenge. Could a proposed 'fix', no matter how attractive otherwise, be deployed on sufficient scale and with sufficient speed to make a meaningful difference to crises we face right now? If not, it is not much more than idle dreaming.

It might be noted with reference to new Passivhaus projects that are popping up that for the most part in 50 years' time, we will still be using the existing building stock for the most part. New buildings will not make a decisive difference for decades to come. The key challenge then is retrofitting what exists now.

³⁶ <https://www.plutobooks.com/9781783713486/ecocode/>

7. A Note on Rewilding

'Rewilding'³⁷ has also become a more popular slogan since the first advocacy of a Green New Deal by the UN, back in 2009.³⁸ Rewilding is perhaps not so much a technofix as, say, alternative energy schemes. There have been some remarkable schemes such as the transformation of the Knepp Estate in southern England.³⁹ Rewilding programmes do, of course, need access to land and that means tackling ownership issues. Population growth will further limit what land can be available for such schemes, not least where larger species need significant areas for foraging etc. Furthermore, on-going growth in demand for housing and other development will eventually engulf land that has been rewilded. Thus, at the time of writing, the Knepp Estate is menaced by plans for nearby house construction.⁴⁰ The issue is again that of 'growthism', about which most Green New Dealers are unclear.



Transformation of formerly overgrazed Glen Finglas Estate in Scotland



Rewilding in Alladale, northern Scotland

³⁷ Eg <https://www.rewildingbritain.org.uk> and <https://rewildingeurope.com>

³⁸ <https://sustainabledevelopment.un.org/index.php?page=view&type=400&nr=670&menu=1515>

³⁹ eg <https://knepp.co.uk/home>

⁴⁰ <https://www.rewildingbritain.org.uk/news-and-views/policy-statements/knepp-jewel-in-rewilding-crown-under-threat-from-development-in-west-sussex>



A renewable energy future, according to a feature in the 'National Geographic' magazine. There is no sign of any wildlife, not even a single blade of grass. Notice the assumption of continued mass motoring, many drivers presumably commuters to those gigantic skyscrapers: business-as-usual indeed!

But, without degrowth to a steady-state economy, this is the future, though, of course, ecological collapse would probably intervene, preventing such 'progress'.

8. Electrification of Road Transport: a case study

Electric cars rank alongside PV panels and wind turbines as the technofix flagship of most Green New Dealism. Yet they are still cars! And, of course there are also many other vehicles clogging the road network (a total of some 1.2 billion and still set to rise to 2 billion by 2035 according to some estimates.⁴¹ Just ask how big a difference it would make if all the vehicles pictured below were electric. On present trends, which electric vehicles would not change, by 2050, our still finite planet would 'accommodate' another 25 million kilometres of paved roads,— enough to encircle the Earth more than 600 times.⁴²

All cars have, of course, to be manufactured, using a great deal of energy and raw materials (including a great deal of water) in the process, sometimes with worse impacts in terms of minerals used. Batteries now have to be manufactured in far bigger quantities with attendant impacts, including disposal of a fast growing number of dead batteries.⁴³ Indeed it would lead sooner or later to sea-bed mining.⁴⁴

They still have to be delivered to their users, including parking at sprawling dealerships. They still have to be powered by some means and, in the short term, that is likely to be fossil fuel electricity. They still devour huge areas of land for roads, parking lots, service stations, home driveways, traffic lights, street lighting, traffic law enforcement officers, police patrols, etc.

During their usage, their tyres and braking systems still pollute the air. There will be still be large-scale road kill⁴⁵ and wildlife habitat fragmentation. Whatever vehicles use them, roads also open up new areas to logging, mining, plantations, suburban sprawl, second homes, long distance commuting, business strips, tourist resorts etc. And, as with all vehicles, electric ones (and their batteries) still need disposal at the end of their 'lives'.

Some 65% of cars are occupied by just 1 person—the driver—and even a fully-occupied car takes up around twice as much space if is full with passengers. The true space needed for cars is several times larger, because of stopping distances, necessary road markings, street furniture and parking. Cars generally sit parked and unused for 96% of their 'lives'. Such statistics stay the same whether they are petrol, diesel or electrically powered.

The basic issue is ultimately one of scale. There is a case for *some* electric vehicles, not least for those with mobility issues. That extends to, say, in-town electric mini-buses,⁴⁶ car-sharing schemes,⁴⁷ electric bicycles, or 'last mile' delivery vehicles. It is the notion that electrifying anything remotely like the scale of current vehicle fleet that is unsustainable.⁴⁸

⁴¹ https://www.greencarreports.com/news/1093560_1-2-billion-vehicles-on-worlds-roads-now-2-billion-by-2035-report

⁴² <https://www.global-roadmap.org/media/publications/>

Roads are major causes of habitat loss and fragmentation eg

<https://www.sciencedirect.com/science/article/pii/B9780124095489109133>.

⁴³ <https://www.theguardian.com/environment/2021/aug/20/electric-car-batteries-what-happens-to-them>

⁴⁴ <https://e360.yale.edu/features/the-race-for-ev-parts-leads-to-risky-deep-ocean-mining>

⁴⁵ Here is an Australian estimate:

<https://theconversation.com/10-million-animals-are-hit-on-our-roads-each-year-heres-how-you-can-help-them-and-steer-clear-of-them-these-holidays-149733> For figures for just one 'protected' American National Park, Yellowstone, see:

<https://www.hcn.org/issues/291/15268> For the UK:

<https://inews.co.uk/news/science/thousands-animals-run-over-uk-every-year-experts-warn-roads-more-dangerous-summer-952050> More generally, see:

<https://en.wikipedia.org/wiki/Roadkill>

⁴⁶ Eg <https://www.visitljubljana.com/en/visitors/travel-information/getting-around/kavalir-getting-around-the-city-centre-by-electric-car/>

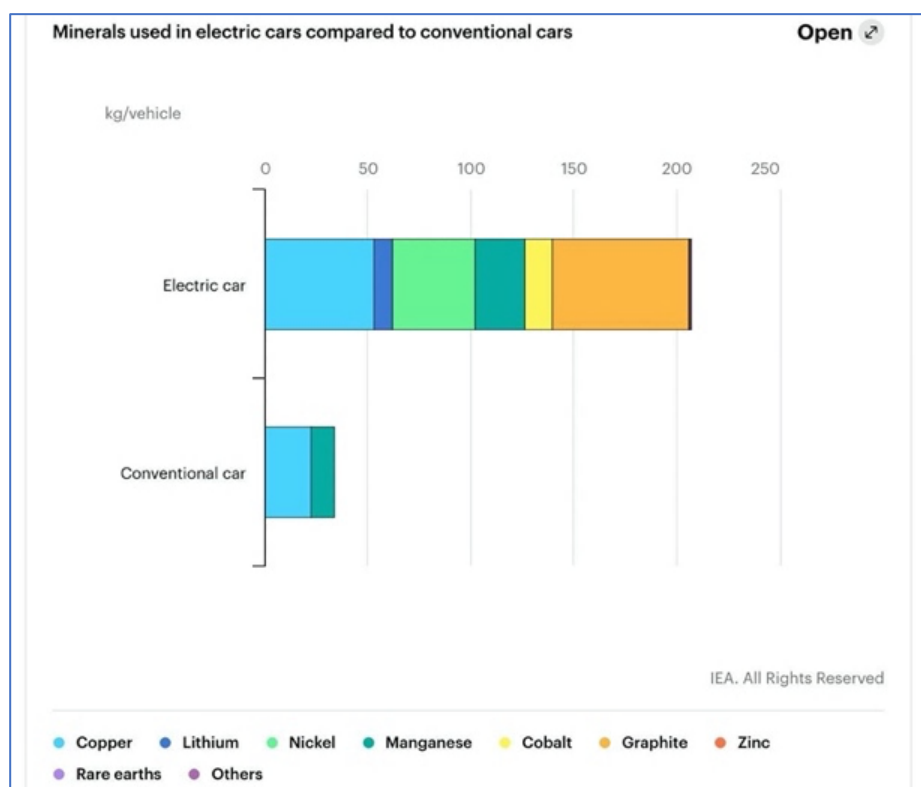
⁴⁷ <https://www.zipcar.com/en-gb/flex/electric>

⁴⁸ <https://pimedia.com/news-and-politics/bryan-preston/2020/12/01/musk-electric-cars-will-require-a-lot-more-electric-power-than-we-currently-have-n1183962?fbclid=IwAR3Ld2pgYX1GUycJC3i285BRNO6o1qLv-1FxKzrf754iIDyf6O1r2BZDZs4> ;

https://www.treehugger.com/electric-cars-footprint-still-too-big-5080916?utm_campaign=treehugger&utm_medium=email&utm_source=cn_nl&utm_content=21726032&utm_term=&fbclid=IwAR3JgudQK739vpno-BwEzXTnaMJNP1VCmV8odl7G5W66OvSD2SVI3AJ_ST0 ;

https://www.treehugger.com/are-electric-cars-part-climate-solution-or-are-they-actually-part-problem-4854209?utm_term=0_32de41485d-1e2fbd8936-

The real issue is not 'electro-mobility' but access ie having a range of facilities within walking and cycling distance.



[243865541&fbclid=IwAR3zV3oWMv8xRQmQ5xSJNQT6UYBV8e5Fpyi7JFqLBg3PSiIHPCGQd2qelKk&utm_campaign=1e2fbd8936-EMAIL_CAMPAIGN_10_12_2018_6_55_COPY_01&utm_medium=email&utm_source=TreeHugger+Newsletters](https://www.bloombergenvironment.com/news/features/2019-06-11/saving-the-planet-with-electric-cars-means-strangling-this-desert?fbclid=IwAR3ZPFTt2eYKI20SxZZAeFe4R0HLDmKeuwwkn5dWd0kE1y6FZoBif1XuVs) ;
<https://www.bloombergenvironment.com/news/features/2019-06-11/saving-the-planet-with-electric-cars-means-strangling-this-desert?fbclid=IwAR3ZPFTt2eYKI20SxZZAeFe4R0HLDmKeuwwkn5dWd0kE1y6FZoBif1XuVs> ;
<https://www.dw.com/en/the-true-cost-of-electric-cars/av-46457917?fbclid=IwAR3VwQUDq-BhL5QkTTyNeMLFmhaU6Bs-i25xpAlcM03Q3-sFOEIJUo73Pqs> ;
<https://www.nhm.ac.uk/press-office/press-releases/leading-scientists-set-out-resource-challenge-of-meeting-net-zero.html?fbclid=IwAR1nxBdZZNzZt6UkeEJsZAnFpBlhAdp1gReerni44t-KompONclL6Zyc4>

9. Crunch Point

The above sections stress the shortcomings of the various proposals under the GND umbrella. They do not match the speed and severity of the interlocking crises now sweeping the planet. To be sure, Green New Dealers do stress issues such as what is rightly called a 'climate emergency' but they still not propose actions commensurate with the enormity of the coming crunch. Its impacts will dwarf those of, say, World War Two. The Covid pandemics will seem small beer indeed.

The underpinning analysis of the GAGND and its associated website reduces the total crisis to one defined largely in terms of excessive carbon emissions, with, logically enough, the solution defined as a "low carbon economy".⁴⁹ It thereby somewhat ignores other GHGs, not least methane,⁵⁰ despite the all too real dangers they pose. Then there is the loss of balancing 'sinks' and changes to global albedo. Cutting carbon emissions is but only one element of a sustainable climate policy. In reality, however, global overheating is only one of many *symptoms* of general 'overshoot'.⁵¹ Critically, there are many more. They include:

- ④ massively reduced numbers and variety of flora and fauna,⁵²
- ④ 'plastification'
(with plans for a massive expansion of plastic production in the pipeline),⁵³
- ④ a lethal cocktail of air and water pollution,⁵⁴
- ④ widespread and worsening 'chemicalisation',⁵⁵
including serious threats to human genetic health.⁵⁶
- ④ surge of invasive species, pests and diseases⁵⁷

49 <http://biophilosophy.ca/Teaching/2070papers/crist.pdf>

50 <https://www.theguardian.com/environment/2021/aug/06/reduce-methane-or-face-climate-catastrophe-scientists-warn>
<https://www.wri.org/insights/3-charts-explain-one-most-overlooked-opportunities-address-climate-change-and-poverty>

51 <https://www.buildingsandcities.org/insights/commentaries/cop26-illusions.html>

52 <https://www.un.org/sustainabledevelopment/blog/2019/05/nature-decline-unprecedented-report/>

53 <https://www.independent.co.uk/climate-change/news/plastic-pollution-environment-investigation-agency-b1995068.html?fbclid=IwAR1htn7UzxECb5VoXqhQU4LsKWeC4zxd3QDtpn1c4b7Qe9XRAz8N7wi9Gdo>
<https://www.independent.co.uk/climate-change/news/plastic-waste-oil-industry-production-carbon-tracker-report-a9704011.html>

54 <https://www.theguardian.com/environment/2021/sep/01/air-pollution-is-slashing-years-off-the-lives-of-billions-report-finds>

We are literally crapping on the planet eg <https://www.theguardian.com/environment/2021/apr/21/raw-sewage-breaches-uk-rivers-10-times-greater-than-watchdog-environment-agency-estimates>

<https://www.nature.org/en-us/newsroom/sewage-pollution-threatens-ecosystems-globally/>

But water is being polluted in a myriad ways eg <https://www.nrdc.org/stories/water-pollution-everything-you-need-know>

https://www.biologicaldiversity.org/publications/papers/SDLP_10Spring_Lopez.pdf

<https://seas-at-risk.org/press-releases/microplastic-pollution-in-the-marine-environment-and-its-climate-implications-how-to-overcome-the-impacts/>

55 https://www.newscientist.com/article/mg25133440-700-why-chemical-pollution-is-turning-into-a-third-great-planetary-crisis/?utm_source=onesignal%26utm_medium=push%26utm_campaign=2021-07-21-Environmental-c&utm_source=ActiveCampaign&utm_medium=email&utm_content=Top+news%3A&utm_campaign=ATF+Daily
https://amp.theguardian.com/environment/2022/jan/18/chemical-pollution-has-passed-safe-limit-for-humanity-say-scientists?fbclid=IwAR0IszQetLRnTmzN2-kdpuXfWmkZJM--dvtaLsPgGnPFNUGHU9Ve_S-d530
<https://www.theguardian.com/environment/2021/sep/14/forever-chemicals-the-hidden-threat-from-the-pfas-toxins-on-your-shelf>

<https://www.cieh.org/ehn/environmental-protection/2021/february/forever-chemicals-a-ticking-time-bomb/>

56 <https://www.bloomsbury.com/uk/suffering-gene-9781842772843/>

57 <https://www.theguardian.com/environment/2020/jul/15/increase-in-invasive-species-poses-dramatic-threat-to-biodiversity-report-aoe>

- ☉ spreading eutrophication,⁵⁸ big algae blooms, giant 'garbage patches'⁵⁹ and huge dead zones in the seas⁶⁰
- ☉ soil denitrification, compaction and erosion,⁶¹
- ☉ spreading crop and forest monocultures, with all their vulnerabilities,⁶²
- ☉ aquifer depletion and increasing water scarcity⁶³
- ☉ massive overfishing,
- ☉ destruction of ocean beds and acidification of oceans,
- ☉ depletion of critical mineral resources,⁶⁴
- ☉ paving over of land by suburban sprawl for housing and other construction⁶⁵

<https://onlinelibrary.wiley.com/doi/full/10.1111/gcb.15199>

<https://www.carbonbrief.org/rise-in-insect-pests-under-climate-change-to-hit-crop-yields-study-says>

<https://agupubs.onlinelibrary.wiley.com/doi/full/10.1029/2020EF001792>

<https://www.theguardian.com/world/2020/jun/17/pandemics-destruction-nature-un-who-legislation-trade-green-recovery>

<https://www.npr.org/sections/coronavirus-live-updates/2020/07/06/888077232/u-n-predicts-rise-in-diseases-that-jump-from-animals-to-humans>

⁵⁸ https://www.usgs.gov/mission-areas/water-resources/science/nutrients-and-eutrophication?qt-science_center_objects=0#qt-science_center_objects

<https://www.circleofblue.org/2021/world/marine-blooms-of-harmful-algae-increasing-in-europe-much-of-the-americas/>

⁵⁹ <https://theoceancleanup.com/great-pacific-garbage-patch/>

⁶⁰ <https://www.weforum.org/agenda/2021/06/dead-zones-have-been-around-for-millions-of-years-but-study-shows-theyre-getting-worse/>

⁶¹ <https://www.theguardian.com/environment/2021/apr/16/poor-mans-rainforest-stop-treating-soil-like-dirt-aoe>

The problem is not just one in 'poor' countries but endemic eg

<https://www.newfoodmagazine.com/news/138300/corn-belt-soil/>

<https://www.sciencedaily.com/releases/2020/04/200422112252.htm>

⁶² https://e360.yale.edu/features/the_folly_of_big_agriculture_why_nature_always_wins

On the mechanisation and chemicalisation of farming:

<https://www.counterpointpress.com/dd-product/the-unsettling-of-america/>

<https://www.mariarodale.com/organic-manifesto>

<http://www.panna.org/pesticide-problem/pesticides-big-picture>

On meat production, see:

<https://friendsoftheearth.eu/publication/meat-atlas-facts-and-figures-about-the-animals-we-eat/> and

<https://www.ciwf.org.uk/books/farmageddon-the-true-cost-of-cheap-meat/>

On the more recent threat from GMOs:

<https://www.publishersweekly.com/978-0-86571-394-9> (Brewster Kneen's 'Farmageddon')

<https://mitpress.mit.edu/books/ecological-risks-engineered-crops>

<https://www.permaculturenews.org/2014/01/16/mae-wan-ho-answers-11-questions-on-gmos-science-and-life/>

The problem is one *of* agriculture not just particular ones *in* agriculture. For a historical perspective, see:

<http://www3.gettysburg.edu/~dperry/Class%20Readings%20Scanned%20Documents/Intro/Diamond.PDF>

Those problems are far from confined to, say, meat production eg

<https://www.independent.co.uk/climate-change/sustainable-living/vegan-foods-low-carbon-environment-b1887195.html>

⁶³ <https://www.wired.com/story/the-ongoing-collapse-of-the-worlds-aquifers/>

While rival peoples fight over land in the Middle East, this trend alone will bring ruin to the contending parties:

<https://www.independent.co.uk/climate-change/opinion/water-crisis-iran-lebanon-climate-b1890133.html>

More generally:

<https://www.wateraid.org/uk/the-crisis/water> and <https://www.unwater.org/water-facts/scarcity/>

⁶⁴ <https://thesenecaeffect.blogspot.com/2021/07/climate-change-and-resource-depletion.html>;

<https://ecologise.in/2019/12/15/blip-humanitys-300-year-self-terminating-experiment-with-industrialism/>

⁶⁵ <https://www.everythingconnects.org/urban-sprawl.html>

<https://vault.sierraclub.org/sprawl/population/factsheet.asp>

<https://environmentaldefence.ca/report/report-the-high-costs-of-sprawl/>

<https://kunstler.com/books/the-geography-of-nowhere/>

The picture is often much worse if one moves to a more regional level. It was reported in 2020, for example,, amongst many losses in biodiversity across the planet, that tropical sub-regions suffered a 94% loss of wild vertebrate life.⁶⁶ The same goes for individual species. The same is especially true when it comes to particular species. Thus, shark and ray species have suffered what can only be called apocalyptic losses.⁶⁷ The immediate cause is the fishing industry, something that again would continue if attention is only focused on the climate crisis.

The picture is also distorted for what seems the better by various sleights of hand. Many reports about the scale of global tree cover conflate single species, even-aged, and chemically sprayed ‘tree farms’ with genuine forests. Another instance is the wildly reviled palm oil industry. For all the ruinous impacts of new plantations carved out of former forest land, the oil is an incredibly efficient crop, producing more oil per land area than any other equivalent vegetable oil crop. Globally, palm oil supplies 35% of the world’s vegetable oil demand on just 10% of the land.⁶⁸

Meat and fish consumption create particular stresses (which also extent to human health — there is not space to discuss all too real matters concerning cruelty to livestock). Their resource requirements are unsustainably gross. Global land allocated to livestock – either in the form of grazing land or cropland used for animal feed is equivalent to the area of the Americas (North, Central and South America combined). Agriculture is the largest consumer of the world’s freshwater resources.⁶⁹ Once again the fundamental problem is not what we consume nor how much we consume but the sheer number of consumers, something that most Green New Dealers studiously evade or deny.

‘Protection’ is no guarantee of safety. Thus the Krefeld Entomological Society reported a 75% decline over only 27 years in total flying insect biomass in several protected European nature reserves. All these losses threaten future ones, as holes are torn in the web of life, with, for example, the loss of critical predator populations.⁷⁰

Most national parks and nature parks are too small and too fragmented to provide the necessary space and resources for wildlife to flourish while their boundaries cannot keep out air and water pollution from outside, let alone the effects of changing climatic patterns. Indeed many are being overwhelmed by the number of human visitors. Poachers also exact their toll in many theoretically protected areas as do illegal miners and loggers. Nor are such lands, included tribal areas, safe from new infrastructure such as highway construction.⁷¹

Most of these dreadful problems could well continue in the much vaunted “low carbon economy”.

<https://us.macmillan.com/books/9780865477506>

<https://cis.org/Report/Population-Growth-Immigration-and-Problem-Sprawl>

<https://www.pri.org/stories/2020-08-07/us-lost-11-million-acres-farmland-development-past-2-decades>

<https://press.uchicago.edu/ucp/books/book/chicago/S/bo3614185.html>

<https://www.cnu.org/publicsquare/it's-sprawl-world-after-all-human-cost-unplanned-growth---and-visions-better-future>

<https://www.thenbs.com/PublicationIndex/documents/details?Pub=CPRE&DocID=257668>

⁶⁶ <https://www.zsl.org/sites/default/files/LPR%202020%20Full%20report.pdf>

⁶⁷ <https://www.nature.com/articles/s41586-020-03173-9>

⁶⁸ https://www.youtube.com/watch?app=desktop&fbclid=IwAR3IIhNPQThrLUbdWNj--1h-gGIFZnmcqS5aOP_xMD1cT_z-NpN4kgeH9g&v=SHTeCHKGh7w&feature=youtu.be

⁶⁹ <https://www.weforum.org/agenda/2021/06/water-footprint-food-sustainability>

⁷⁰

<https://www.nature.com/articles/s41598-019-51424-1>

⁷¹ Eg <https://www.theguardian.com/environment/2017/aug/15/bolivia-approves-highway-in-amazon-biodiversity-hotspot-as-big-as-jamaica> ; <https://www.theguardian.com/world/2011/mar/27/serengeti-highway-national-park>

The GAGND website does talk of a “climate and nature crisis” but, as with most if not all variants of a Green New Deal, there is little sense of an appropriate ‘new deal’ for the rest of nature. The drastic decline in the richness and diversity of non-human nature simply does not get the prominence it deserves.⁷² Furthermore, the juxtaposition of “climate and nature” rather suggests that that global overheating and biodiversity meltdown go hand in hand. It is certainly true that climate change adversely affects both flora and fauna, and in many ways, even just the stresses of heat waves.⁷³ More generally, many species simply cannot swiftly adapt to new climatic regimes.

To some extent, then, there is an interlocking climate meltdown and biodiversity breakdown crisis. That said, however, there are far bigger drivers of extinction and endangerment (see second diagram below), ones intimately linked to human numbers, not least the number of mouths to feed and people to clothe, house, keep warm and so forth.⁷⁴

To understand the basic causes of the collapse of biodiversity, the sheer extent of human ‘takeover’ of this finite planet must be grasped. Humans account for 0.01 percent of the planet's biomass, our activity has reduced the biomass of wild marine and terrestrial mammals by six times and the biomass of plant matter by half. Humans account for about 36 percent of the biomass of all mammals.

Domesticated livestock, mostly cows and pigs, account for 60 percent, and wild mammals for only 4 percent. The biomass of poultry is about three times higher than that of wild birds. Humans, just one species, are diverting planetary production just to themselves, leaving too little space and resources for non-human species to flourish.⁷⁵ On average, for each person on the globe, anthropogenic mass equal to more than his or her bodyweight is produced every week.⁷⁶



⁷² <https://livingplanet.panda.org/en-us/>

https://www.cbsnews.com/news/endangered-species-animal-population-decline-world-wildlife-fund-new-report/?fbclid=IwAR3we5CtB4um1yIU_2xrA6kfnjPsHwa2KjZAmqZifJ5H5KbqYqWyPvKBWBY#app

<https://www.pnas.org/content/114/30/E6089>

‘Insectageddon’ is particularly critical:

<https://www.penguin.co.uk/books/144/1443405/silent-earth/9781787333345.html>

https://www.theguardian.com/environment/2021/jul/25/the-insect-apocalypse-our-world-will-grind-to-a-halt-without-them?CMP=twl_a-environment_b-

[gdneco&utm_source=ActiveCampaign&utm_medium=email&utm_content=Weekend+Reader%3A&utm_campaign=Weekend+Reader+Email](https://www.pnas.org/content/115/25/6506)

<https://www.pnas.org/content/115/25/6506>

⁷³ <https://www.nature.com/articles/nature02121>

<https://news.mongabay.com/2021/06/scientists-call-for-solving-climate-and-biodiversity-crises-together/>

⁷⁴ <https://press.uchicago.edu/ucp/books/book/chicago/A/bo31043560.html> ;

<https://islandpress.org/books/keeping-wild>

⁷⁵ [https://www.nature.com/articles/s41586-020-3010-](https://www.nature.com/articles/s41586-020-3010-5?proof=thhttps%3A%2F%2Fwww.nature.com%2Farticles%2Fsj.bdj.2014.353%3Fproof%3Dt)

[5?proof=thhttps%3A%2F%2Fwww.nature.com%2Farticles%2Fsj.bdj.2014.353%3Fproof%3Dt](https://www.nature.com/articles/s41586-020-3010-5?proof=thhttps%3A%2F%2Fwww.nature.com%2Farticles%2Fsj.bdj.2014.353%3Fproof%3Dt)

⁷⁶ [https://www.nature.com/articles/s41586-020-3010-](https://www.nature.com/articles/s41586-020-3010-5?proof=thhttps%3A%2F%2Fwww.nature.com%2Farticles%2Fsj.bdj.2014.353%3Fproof%3Dt)

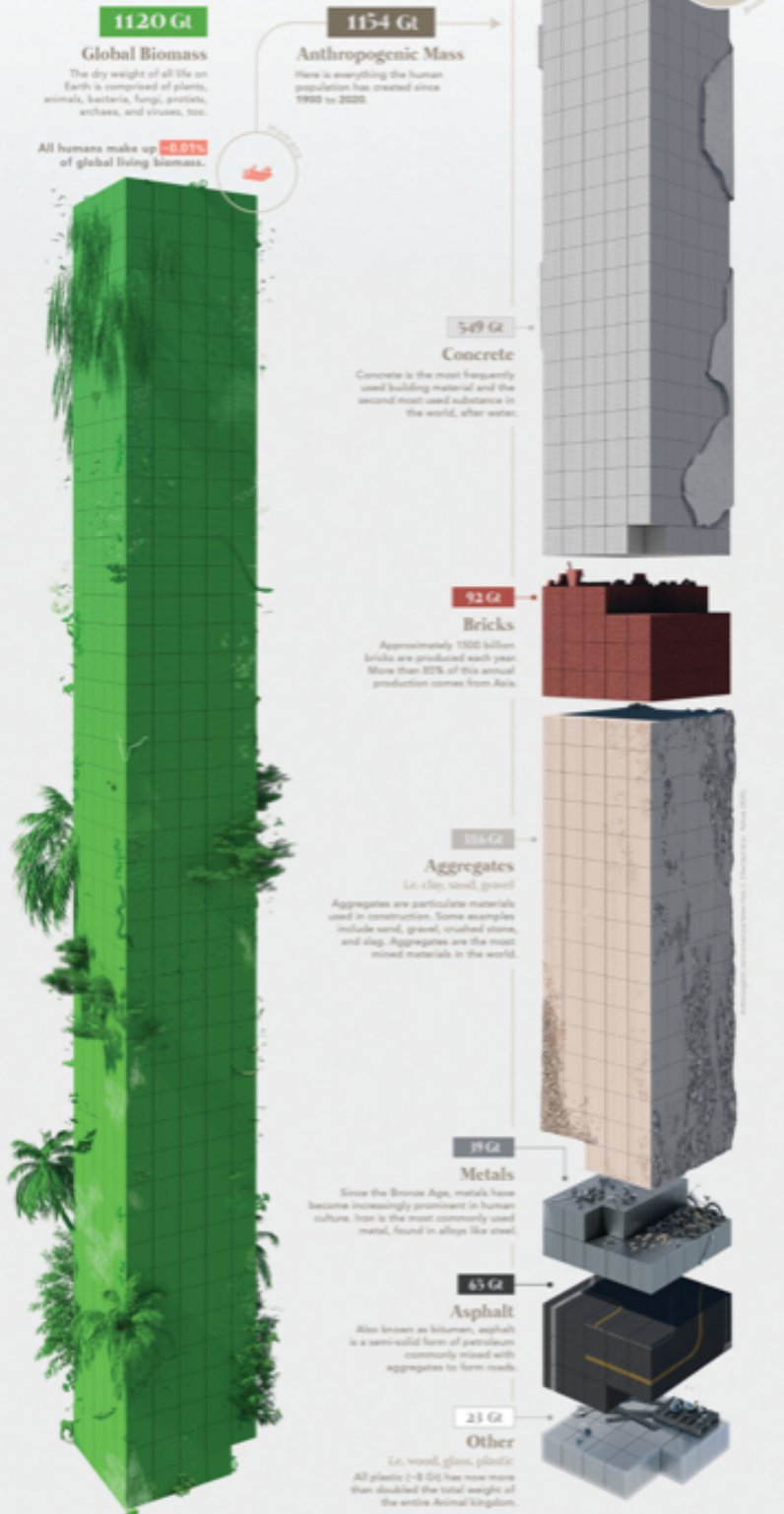
[5?proof=thhttps%3A%2F%2Fwww.nature.com%2Farticles%2Fsj.bdj.2014.353%3Fproof%3Dt](https://www.nature.com/articles/s41586-020-3010-5?proof=thhttps%3A%2F%2Fwww.nature.com%2Farticles%2Fsj.bdj.2014.353%3Fproof%3Dt)

Visualizing the Scale of Anthropogenic Mass

Anthropogenic mass, or human-made mass, refers to the materials embedded within inanimate solid objects that are made by humans.

In 2020, the amount of anthropogenic mass exceeded the weight of all global living biomass.

As humans continue to dominate Earth, questions surrounding our material output are increasing. We break down the composition of all human-made materials and the rate of their production.

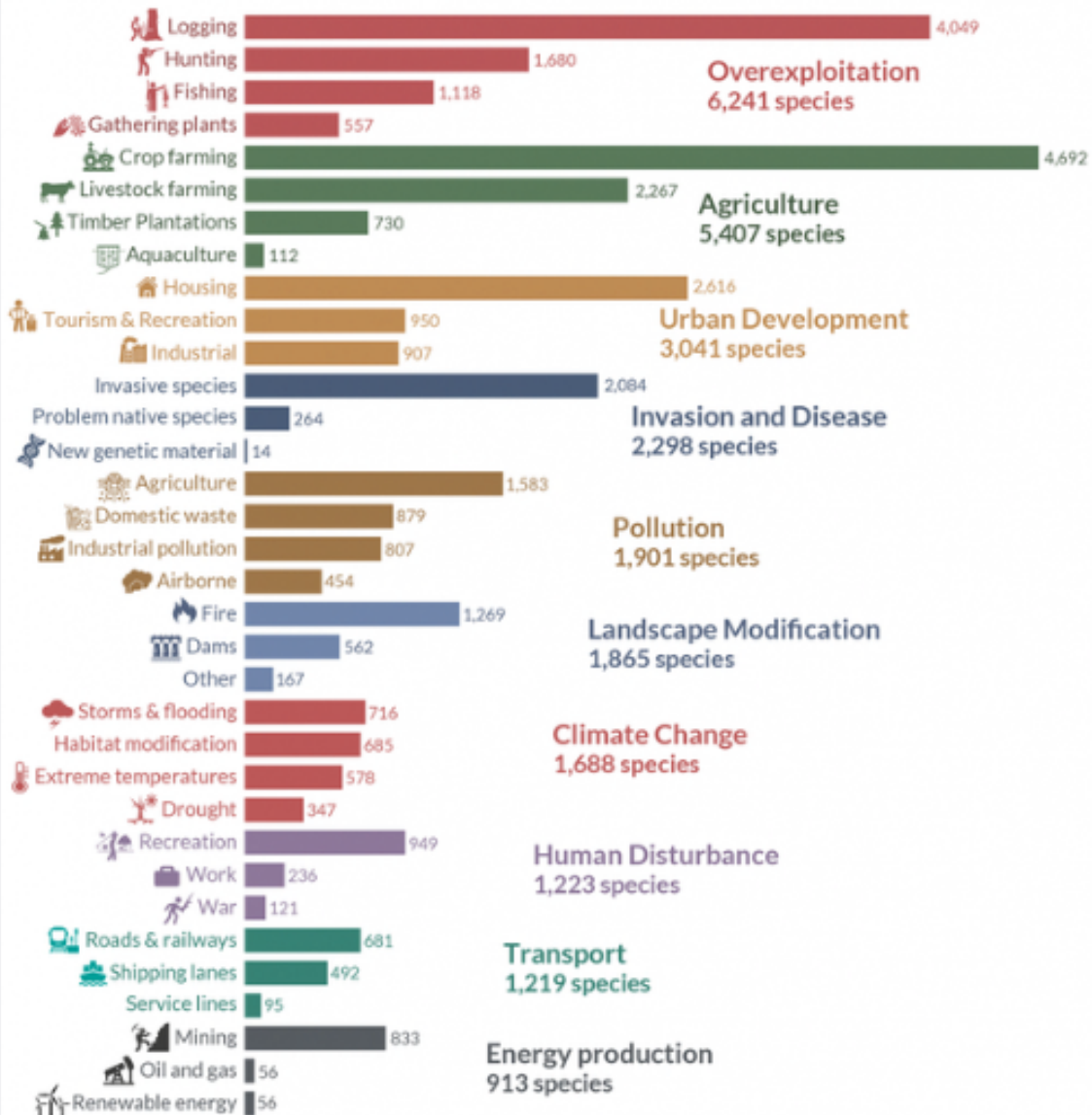


The human-made technosphere supplants the ecosphere, leaving less and less for non-human species. For more illuminating images, visit this website: <https://www.visualcapitalist.com/category/green-2/>

What are the largest threats to wildlife?

Our World
in Data

The number of species threatened with extinction by a specific driver of biodiversity loss. This is based on a study of 8,688 species that are near-threatened or threatened with extinction on the IUCN Red List. Around 80% of assessed species are at risk from more than one threat.



Data source: Maxwell et al. (2016). Biodiversity: The ravages of guns, nets and bulldozers. Nature.

10. Growing issue

The GAGND and its website duck the really big issue. It is **growth**, growth in the number of people *and* growth in the economy. Rather than face the reality of what, in fact, is a state of comprehensive *overshoot*, with a corresponding need for overall degrowth, the GAGND takes refuge in bromides claiming “we can all flourish” (how many ‘we’? what level of per capita consumption will make people “flourish”?), with some vague talk of a “just transition”.

In reality, we have already reached the point of deep and comprehensive overshoot.⁷⁷ The Declaration, however, condemns only “growth at any cost”. What weasel words! But any overall increase in the use of energy, raw materials and sheer physical space in the human economy can but worsen global overheating, biodiversity meltdown and all the other crises we face. The problem is not just ‘GDP growth’ (GDP being a pretty meaningless measure anyway) but *all* physical growth.

The issue is not just ‘maldevelopment’, though there is certainly much of that, but general **overdevelopment**.⁷⁸ The only solution, then, is not ‘clean’ growth, not ‘green growth’,⁷⁹ not ‘smart planning’, not “post-capitalist networking”, IT-based “sharing”,⁸⁰ not ‘eco-industrial’ revolutions,⁸¹ and certainly not ‘ecological modernisation’.⁸²

The only road to sustainability is **overall degrowth** to a steady-state economy and, *within that framework*, and only within it, a much more equitable distribution of resources, a combination of some ‘levelling up’ and considerable ‘levelling down’.⁸³

77 For a brilliant exposition, see: <https://www.youtube.com/watch?app=desktop&v=o3nCFwhV-9E&feature=share&fbclid=IwAR1LV16ZXiXPbCzocxmM152rJN--D7ZKn4xciaUtnifc0TKRoGsnkzwxTh8>

See also:

https://goodlife.leeds.ac.uk/?fbclid=IwAR3OowIBbyBmdeac6zOo3y39pl4QbzOUIR3Ku_k7LWyxAoDHMKmWe_b1BQ

https://monoskop.org/images/9/92/Catton_Jr_William_R_Overshoot_The_Ecological_Basis_of_Revolutionary_Change.pdf and

<https://www.xlibris.com/en-gb/bookstore/bookdetails/582450-bottleneck-humanitys-impending-impasse>

If we factor in the needs of non-human species, the human overshoot is all the greater.

78 <https://populationspeakout.org/the-book/view-book/>

79 <https://ideas.repec.org/a/taf/cnpexx/v25y2020i4p469-486.html>

<https://www.commondreams.org/views/2019/01/17/could-green-new-deal-save-civilization>

<https://www.apn-gcr.org/bulletin/article/the-rise-and-flaws-of-green-growth/>

<https://www.theguardian.com/commentisfree/2019/mar/05/climate-breakdown-uk-greener-new-deal-cap-consumption>

https://unctad.org/system/files/official-document/osgdp2015d4_en.pdf

A South Korean case study:

<https://isreview.org/issue/97/origins-and-delusions-green-growth>

80 <https://www.opendemocracy.net/en/opendemocracyuk/masons-postcapitalism-are-networks-actually-part-of-problem/>

<https://www.theguardian.com/commentisfree/2014/sep/28/sharing-economy-internet-hype-benefits-overstated-evgeny-morozov>

<http://www.ajkeen.com/the-internet-is-not-the-answer-1>

<https://penguinrandomhousehighereducation.com/book/?isbn=9780385419949>

<https://networkcultures.org/blog/publication/networks-without-a-cause-geert-lovink/>

There is a case for sharing in other ways, including a sharing out of work hours both to cut an overlong working week and create jobs for the unemployed eg <https://www.ucpress.edu/book/9780520325050/after-the-gig>

The point is that we need to discriminate when considering economic and technological policies, taking some elements but rejecting others. The precautionary principle is a key tool here eg

<https://agroecology-appg.org/ourwork/article-by-rupert-read-on-the-precautionary-principle/>)

81 <https://ces.public.lu/content/dam/ces/fr/actualites/2012/01/prof-brand/green-economy.pdf>

Cf: <https://bristoluniversitypress.co.uk/the-age-of-low-tech>

<https://newsociety.com/books/t/techno-fix>

82 https://www.researchgate.net/publication/280319727_Ecological_Modernisation

<https://www.monbiot.com/2015/09/24/wiping-the-world-clean/> <http://jwsr.pitt.edu/ojs/jwsr/article/view/611>

<https://climateandcapitalism.com/2015/05/19/hijacking-the-anthropocene/>

<https://www.resilience.org/stories/2015-05-06/a-degrowth-response-to-an-ecomodernist-manifesto/>

83 <https://thesimplerway.info/DegrowthHowMuch.html>

It must be remembered that small figures can still mean big growth. The seemingly number of a 1% growth rate will double the size of what is growing in just 70 years. A small growth rate in something already very large will still create a significant amount of growth overall, something very significant now regarding human numbers.

Remember too that overshoot is the consequence of too much throughput of energy, raw materials and physical space in the human economy overwhelming the 'economy' of the Earth: the 'technosphere' (or 'industriosphere')⁸⁴ is crushing the life-sustaining 'ecosphere'. Simply switching that throughput to the production of 'socially useful' goods and services, instead of, say, luxury items for the few or military hardware does not, ipso facto, reduce unsustainable pressures on the ecosphere. In the Earth's accounts, both ambulances and armoured cars clock up similar debits, regardless of their very different social utility or exchange value.



Top: Mexico City; Motorway toll station; Monocultural agriculture Bottom: Industrialised feedlot; greenhouses, southern Spain; copper mine

Any plans for a new social order must be grounded, above all else, in the biogeophysical realities of our finite planet. As Madonna once sang, "we are living in a material world" and one in which nothing will happen unless there are energy inputs and room in which to do things. Contrary to another song, money certainly does not make the real world go round, even if it can indeed badly distort social activity and priorities.

⁸⁴ <https://www.tandfonline.com/doi/abs/10.1080/00963402.1975.11458211>.

Remember that agriculture is a technology and one that has had far more impact on the ecosphere than cars, planes, boats and trains.

11. Matter matters too

Most discussion of sustainability focuses somewhat one-sidedly on energy supply, seemingly assuming that if we can fix that we will be home and dry. Correspondingly, much less attention is devoted to other sectors. Mining in particular tends to be the sector most ignored by ‘decarbonisers’, ‘green growers’ and assorted shallow environmentalists.⁸⁵ Yet there are huge and unsustainable effects from deep mines, open cast mining, quarries, gravel pits, and sand extraction sites.⁸⁶

That impact would not diminish — indeed, it could well increase in some cases ⁸⁷— with moves to *large-scale* renewable energy production, electrification, and efficient gadgetry. That most certainly includes activities based on telecommunications and computerisation, from digital democracy to home working.⁸⁸ Remember: the most polluted place on Earth, Batou in China, is

85 Indeed blindness about mining can lead to some bizarre decisions eg https://www.bbc.co.uk/news/uk-wales-57986167?fbclid=IwAR0XrC6y41KwbWNax1MZoGFlurwMffcc8bqLdQxo_Y6slamrcd4F28JIdbA

By UNESCO's logic, one might as well add Alamogordo in the New Mexico desert or Bikini Atoll in the Pacific. Humans created some really distinctive landscapes there! Will giant HEP dams and the river systems they have destroyed be added to the heritage list? Perhaps the Milano-Laghi motorway, the first of thousands of such tentacles that have destroyed one habitat after another whilst fragmenting many more (as well as wrecked many human communities). This complex stands out from the crowd: <http://worldkings.org/.../world-discovery-p10-mudanjiang...>. Let's give it a heritage status so future generations can celebrate the achievement of feeding more people.

86 Sand might seem to be a resource where scarcity is no real danger. In fact there are growing shortages of sand and, in any case, its extraction is far from sustainable. Once again, limits to growth cannot be avoided. See, for example: <https://accelerator.chathamhouse.org/article/driven-to-extraction-can-sand-mining-be-sustainable>
<https://e360.yale.edu/features/the-hidden-environmental-toll-of-mining-the-worlds-sand>
<https://www.bbc.com/future/article/20191108-why-the-world-is-running-out-of-sand>

87 For example:

<https://amp.theguardian.com/us-news/2021/nov/09/copper-mining-reveals-clean-energy-dark-side?fbclid=IwAR30v6hQg5I-MUDCY5U77QKIYsq6ZwxDij6yvgnQarIHwFBPOe-b3-IDRX4>
<https://insideclimatenews.org/news/07112021/lithium-mining-thacker-pass-nevada-electric-vehicles-climate/?fbclid=IwAR180LVLMwzejEm5VWcGbuT643HOUfQHwipkobMxVuPU2J-bnxY82noZ6xc>
<https://www.theguardian.com/commentisfree/2021/jun/14/electric-cost-lithium-mining-decarbonisation-salt-flats-chile>

88 For some snapshots, see:

Silicon:

<https://grapevine.is/news/2018/09/10/silicon-folly-the-failure-of-the-latest-industrial-trend/>;

Cobalt:

<https://storymaps.arcgis.com/stories/ff59f49e275c42628a72ed412245450f>;

Lead:

http://content.time.com/time/specials/2007/article/0,28804,1661031_1661028_1661020,00.html ;

Copper:

https://www.earthworks.org/cms/assets/uploads/archive/files/publications/FS_Problems_BinghamCanyon_2011_low.pdf

Lithium:

<https://www.wired.co.uk/article/lithium-copper-mining-atacama-desert>;

Magnesia:

<https://www.indmin.com/Article/3749529/Magnesia-Features/Dust-and-ashes-A-picture-of-Liaonings-magnesia-industry.html>;

Tungsten:

https://almony.com/construction-of-the-worlds-largest-tungsten-mine-has-begun/#GmediaGallery_35-all-0 ;

⌚ Battery manufacture:

<https://www.theverge.com/2019/11/13/20962317/tesla-gigafactory-deal-reno-nevada-the-city-podcast-911-calls-model-3> ;

Transmission lines:

<https://www.power-technology.com/features/chinas-mega-transmission-lines/>

<https://www.power-technology.com/features/featurethe-worlds-longest-power-transmission-lines-4167964/>

Pumped water storage:

<https://www.dominionenergy.com/projects-and-facilities/hydroelectric-power-facilities-and-projects/bath-county-pumped-storage-station>

<https://www.nsenergybusiness.com/projects/fengning-pumped-storage-power-plant/> ;

https://www.store-project.eu/documents/results/en_GB/environmental-performance-of-existing-energy-storage-installations;

the victim of mining for their key 'ingredients'.⁸⁹ Mining devours huge areas of the planet.⁹⁰ Then there are all the large and dangerous tailings ponds and slag heaps.⁹¹ Associated refining and transportation add to the burden.⁹² Basically, the extractive industry entails ecosystem destruction, a human assault on the rest of nature whose wounds often take centuries to heal and sometimes never in any relevant time scale, such as 'forever chemicals' and much radioactive waste.

Sustainability depends, then, not just on the right kind and quantity of energy production but also a viable flow of sufficiently high grade raw materials. Unqualified enthusiasm for renewable energy sources is usually matched with an unwarranted faith in the potential of material recycling (energy not being recyclable, though, on a rather limited scale, waste heat can be tapped for other purposes).⁹³ There is indeed a case for some recycling but it is the last option in the 'R's after refusal (ie no production in the first place), reduction (lowered inputs), reuse, repurposing, repair and regionalisation (ie less transcontinental transportation).

Apart from energy costs of collecting and processing materials, air and water pollution dog many recycling plants. Post recycling net yields can be low and/or of inadequate quality, only suitable for very basic uses. Often, recycling (or, rather, pretence to recycling or even just wishful thinking that 'x' will indeed be recycled) is a cover for on-going production of materials such as plastic.⁹⁴

It must also be remembered that some claims for recycling successes (as in the case of Sweden) actually include waste incineration. Yet incinerators generate hazardous air pollution as well as significant CO2 emissions as well as create a truly perverse incentive to generate more and more waste to burn.⁹⁵

Meanwhile, material substitutions tend to be a game of musical chairs and cannot deal with the sheer scale and variety of coming resource peaks.⁹⁶ No technology can substitute on any

HEP:

<http://www.ecoropa.info/publication/social-and-environmental-effects-large-dams>

<https://www.ecowatch.com/mega-dams-2646269103.html>

<https://www.internationalrivers.org/resources/factsheets/>

The threat to Amazonia is often framed in terms of deforestation courtesy of food production (eg ranching and soya bean plantations). But:

<https://news.mongabay.com/2020/10/brazils-amazon-dam-plans-ominous-warnings-of-future-destruction-commentary/>

Some other case studies:

<https://pubmed.ncbi.nlm.nih.gov/11148764/>

http://thejaguarproject.org/jaguar_conservation_reventazon_dam.html

<https://www.abc.net.au/news/2021-05-25/chinas-plan-to-build-mega-dam-on-yarlung-tsangpo-brahmaputra/100146344>

<https://news.mongabay.com/2013/12/africa-to-build-worlds-largest-dam-but-who-will-benefit/>

⁸⁹ <https://www.bbc.com/future/article/20150402-the-worst-place-on-earth>

⁹⁰

https://wad.jrc.ec.europa.eu/mining?fbclid=IwAR37_ZzsPzznOScgT_AuvzmyDPxPepXt0IB9WTGbMVMWGr99t84QR2VJQZs

⁹¹ eg https://en.wikipedia.org/wiki/Tailings#cite_ref-3 ;

<https://www.theguardian.com/world/2019/jan/29/the-river-is-dying-the-vast-ecological-cost-of-brazils-mining-disasters> ;

⁹²

<https://www.chelseagreen.com/product/extracted> ;

https://www.panda.org/discover/knowledge_hub/where_we_work/amazon/amazon_threats/other_threats/amazon_mining/

⁹³ The best example encountered by the author was the use of waste heat from a distillery on Islay to warm a swimming pool next door for local children. It dramatically cut the number of deaths from drowning since, before, children had been swimming in dangerous local waters.

⁹⁴ <https://www.npr.org/2020/09/11/897692090/how-big-oil-misled-the-public-into-believing-plastic-would-be-recycled>

⁹⁵ <https://resource.co/article/incineration-proposals-incompatible-uk-net-zero-and-recycling-targets> ;

<https://www.no-burn.org/europewasteburning/>

⁹⁶ <https://www.youtube.com/watch?v=cdXdalsfio8>

meaningful scale critical life-support services provided by the Earth's ecosystems.⁹⁷ Amongst Green New Dealers there seems little appreciation of the 'rebound effect' and how that might cancel out gains in, say, recycling, efficiency and better management.⁹⁸ A case in point is the 'efficient' LED light where savings have been routinely translated into more lighting.⁹⁹



*The GAGND pledges “publicly owned technologies freely available to countries around the world”.
What does that mean? Which technologies? What would the impact of their global generalisation?*

*Top Left: High-speed trains in China
Centre Left: Thanet Earth greenhouses
Bottom Left: Genetically modified crop*

*Top Right: Large-scale technological recycling
Centre Right: Google server farm
Bottom Right: (Envisaged) electric aircraft*

⁹⁷ <https://www.routledge.com/Human-Dependence-on-Nature-How-to-Help-Solve-the-Environmental-Crisis/Washington/p/book/9780415632584>

<https://academic.oup.com/bioscience/article-abstract/33/4/248/232902?redirectedFrom=fulltext>

⁹⁸ https://www.boell.de/sites/default/files/WEB_121022_The_Rebound_Effect-Green_Growth_Unraveled_TSantarius_V101.pdf

⁹⁹ <https://gizmodo.com/the-switch-to-outdoor-led-lighting-has-completely-backf-1820652615>

12. Sound of deafening silence

With regards to human numbers, current and projected, there is total silence. Yet every increase in the total human population automatically multiplies the effects of overconsumption and 'malign' technologies as well as brings direct impacts of its own.¹⁰⁰ Even the most frugal lifestyle requires water, food,¹⁰¹ heating, shelter, and basic clothing. Most people prefer more: decent housing, assorted household appliances, health and social care, education, job opportunities, transportation, leisure facilities, and more. They include unquantifiable things such as privacy and a degree of choice, hard to measure yet attainable only if there is sufficient space, energy and raw materials. Incredibly, most discussions of population trends blithely ignore the ecological context and diminishing carrying capacity.¹⁰²

It might be surmised that some if not most GAGND signatories and supporters are either population 'deniers' (ie people who think human numbers do not count) or evaders (people who treat the subject as taboo, even they personally recognise the problem). There might be those who think that any mention of human numbers is 'colonialist' or 'racist', a case of blaming the victim and so forth.¹⁰³

Perhaps a majority think that there *might* have been a problem but, mercifully it is solving itself as fertility rates seemingly fall. It might be remembered that a possibly temporary fall in a growth rate is not the same thing as an absolute and sustained fall. Even the latter may still be reduction to a still level above regional and global carrying capacity. There were falls in fertility rates in the 1930s but, twenty years later, there was the biggest population boom in world history. A fall in a local fertility rate might be offset by large-scale immigration so the overall

100 <https://ugapress.org/book/9780820343853/life-on-the-brink/>
https://overpopulation-project.com/wp-content/uploads/2018/12/2010_Ryerson_TheMultiplierofEverythingElse_PostCarbonReaderSeries5221.pdf
<https://us.macmillan.com/books/9781466813762/>

John Holdren analysed the unsustainable impact of the US transport system. He demonstrated that the main driver was not the preferred mode of transport (technology) nor the frequency and distance of journeys (consumption / affluence) but the sheer number of travellers (ie population)

<https://www.jstor.org/stable/20024165>

101 One of the most foolish tropes in the whole debate about sustainability is the reduction of the population dimension to a matter of food supply. People do not live by bread alone! That said, there is a dangerous dynamic within just food matters in which increased food supply makes possible increasing population whose on-going growth then 'demands' increasingly unsustainable forms of food production (intensive tillage, fewer fallow years, more fertiliser usage, greater irrigation, mechanisation, etc) thereby threatening to bring the whole structure down. It must be remembered that Norman Borlaug, 'father' of the higher yielding hybrid crop species (the 'green revolution' that seemingly defused the 'population bomb') warned that the new crops only bought temporary breathing space before the issue of human numbers had to be directly addressed (see final 4 paragraphs here:

<https://www.nobelprize.org/prizes/peace/1970/borlaug/lecture/>

More generally on the population-food dimension, see:

<https://www.populationmedia.org/wp-content/uploads/2010/03/Human-Carrying-Capacity-is-Determined-by-Food-Availability.pdf>

<https://www.semanticscholar.org/paper/MODELLING-HUMAN-CARRYING-CAPACITY-AS-A-FUNCTION-OF-Zulkarnaen-Rodrigo/a6b4ac9a8233560680f2959033f524a9d864156b>

102 <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0247214>

103 Such people are so prepared to be offended that they seldom care to study the matter with any seriousness. On the charge of those concerned about population blaming people in the former colonial lands, see:

<https://npg.org/.../the-most-overpopulated-nation.html>

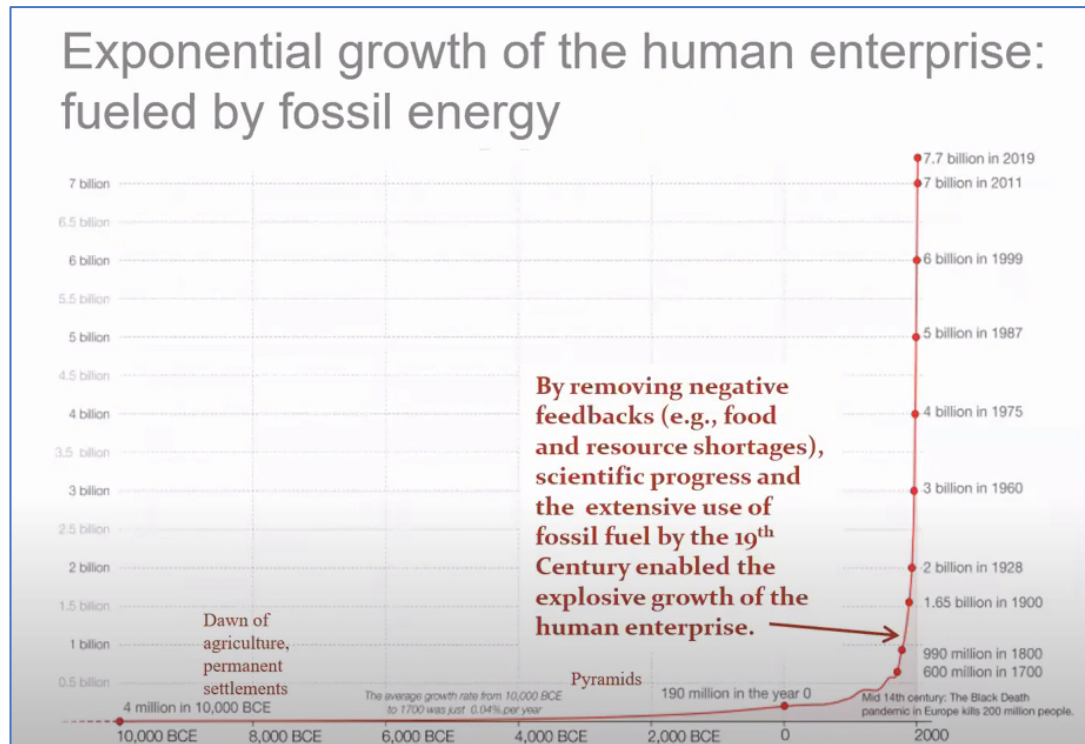
See also:

<https://mahb.stanford.edu/blog/past-present-and-future-population-a-personal-account-of-india/>

But still rapidly rising numbers in countries such as India are an all too real danger, both to future generations and to other forms of life. Nigeria, for example, has an estimated population of some 206 million. It is projected to increase to 263 million by just 2030. Will that growth make its already severe environmental, economic and social problems, including violent internal conflicts, better or worse? Will it make them easier or harder to solve?

population still goes up.¹⁰⁴ Trend certainly is not destiny unless pro-active policies are in place to achieve the desired goal of a genuinely sustainable population.¹⁰⁵

Furthermore, an increasing number of governments are trying to promote population growth (baby bonuses etc)¹⁰⁶ and some are severely restricting family planning facilities. Indeed, many politicians wax lyrical about demographic dividends delivered by more people while the media is full of commentary either denying any problems with human numbers or welcoming higher levels. There is evidence that in several countries women would positively choose to have more children if they could. The population time bomb has certainly not been defused.



Source: World Population Day Presentation by Dr. William Rees, 14/07/21,
<https://www.scientistswarningeurope.org.uk/discover/world-population-day-2021>

104 Eg <https://www.pewresearch.org/hispanic/2020/08/20/facts-on-u-s-immigrants/>
 with unsustainable consequences outlined here:
<https://www.numbersusa.org>

105 Eg <https://overpopulation-project.com/solutions/>

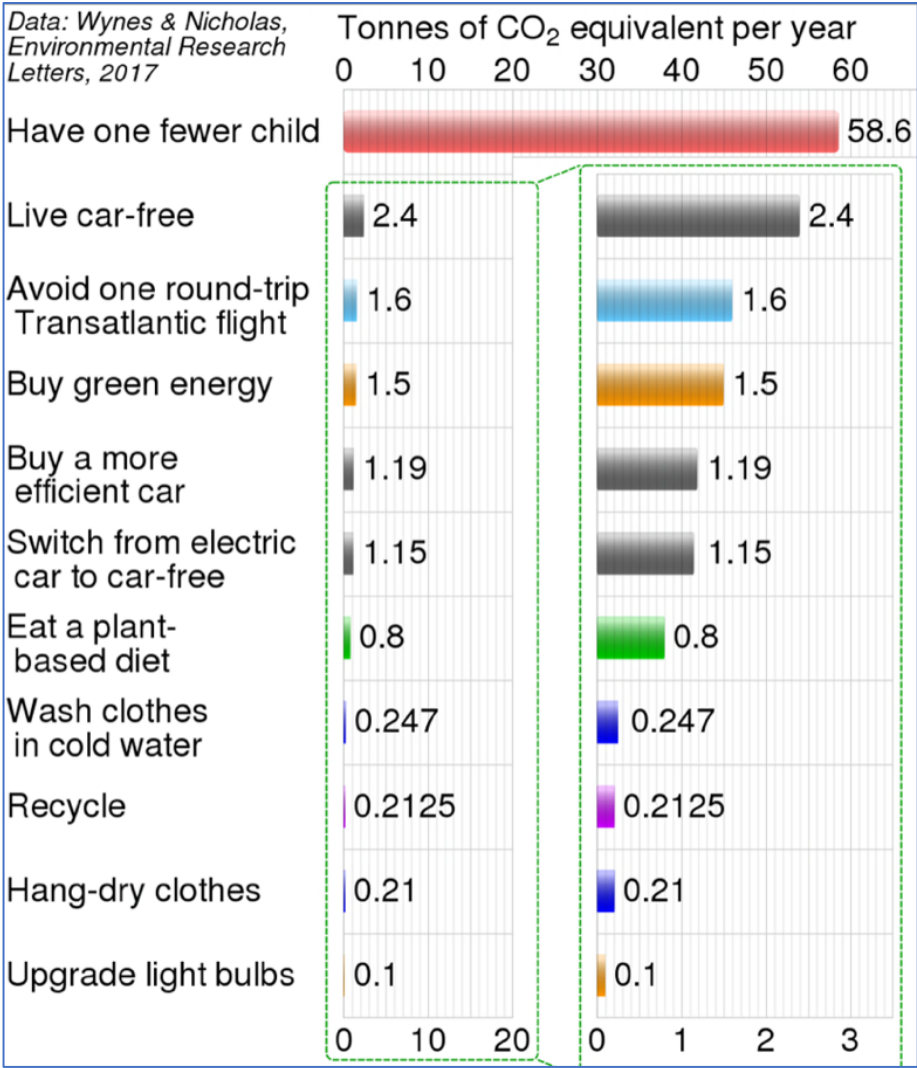
It is hard to say what a sustainable population might be since there are so many variables. Many populations, especially those in cities, are unsustainably dependent on 'ghost acres' elsewhere for their resources and to take away their waste. So the figure might vary according to whether that pattern can persist (unlikely!) and what assumptions are made about lifestyles, range of choice, personal physical space (cultures can vary) and so forth. But the evidence cited in this paper suggests that the figure will be much lower than today's numbers. The real choice is whether we want to strive for that goal by deliberate choice and by humane means or have it forced upon us by ecological blowback. Serious studies hazard a guess of a total figure of around 3 billion (for one set of estimates, see: <https://planet3billion.com/index.html>. See also <https://link.springer.com/article/10.1007/s10668-011-9336-2>

106 Eg <https://www.dw.com/en/france-moves-to-encourage-large-families/a-1720921> ;
http://www.washingtonpost.com/wp-dyn/content/article/2006/10/17/AR2006101701652_3.html ;
<https://www.thelocal.com/20190117/babies-wanted-nordic-countries-crying-out-for-kids-denmark-norway-sweden> ;
<https://www.smh.com.au/national/birth-rate-up-after-baby-bonus-20060916-gdoekm.html> ;
<http://old.post-gazette.com/pg/06293/731744-82.stm> ;
<https://geographyfieldwork.com/SpainBabyBonus.htm> ;
http://news.bbc.co.uk/1/hi/world/south_asia/6215497.stm ;
<https://uk.reuters.com/article/oukoe-uk-germany-babies-idUKL2981801820070102> ;
<https://www.telegraph.co.uk/news/2017/03/10/putin-paying-women-have-children-inside-russias-super-families/> ;
<https://www.independent.co.uk/news/world/europe/italy-far-right-free-land-third-child-family-government-matteo-salvini-birth-rate-children-a8616781.html> ;
<https://www.lifesitenews.com/news/hungary-plans-to-encourage-support-large-stable-families1> ;
<https://montrealgazette.com/news/local-news/more-than-one-child-expect-more-cash-from-quebec-legault-says> ;
<https://www.straitstimes.com/singapore/building-support-for-singapore-families-and-boosting-the-birth-rate> .

One might wait a long time before GAGND signatories will condemn forthrightly such policies.

Not having that extra child is by far the biggest single thing a couple could do to reduce their ecological impact. It dwarfs what can be achieved by using an electric car, not flying, consuming less meat, installing LED lighting, insulating the loft, and so forth. Yet the GAGND Declaration is deafeningly silent (actually it also says nothing about meat consumption, another area where big reductions in the human impact could be quickly achieved, not least by releasing land and resources for all those species now threatened with extinction). An obvious place to focus is the huge number of unwanted births, very roughly 42% of all births. Surely a really green New Deal would make such matters central. Indeed, other benefits apart, it is probably the cheapest way to defuse the climate and most other ecological crises.¹⁰⁷

Below are two examples of studies that demonstrate that “reproductive choices” are the most significant ones people can make regarding the future of the planet. In other words human numbers do count and they count decisively, exacerbating most problems whilst making them harder to solve.



Wikipedia published the above table.¹⁰⁸ Compression means that the gap between the first and the figure 58.6 and the second one with 2.4 does not instantly look wide. It is! The table only refers to CO₂ emissions. Remember that it is only one of a variety of assaults on the Earth’s life-support systems

¹⁰⁷ https://www.biologicaldiversity.org/news/press_releases/2015/family-planning-02-05-2015.html
<https://www.populationconnection.org/climate-change-family-planning/>

¹⁰⁸ https://en.wikipedia.org/wiki/Individual_action_on_climate_change#/media/File:Wynes_Nicholas_CO2_emissions_savings.svg

Adopting Environmentally Friendly Lifestyle Changes	
Drive hybrid car + Reduce miles driven by 1/3 + Replace single pane windows with double + Replace incandescent bulbs with CFLs + Replace fridge with energy efficient model + Recycle newspaper, magazines, glass, plastic, aluminum and steel cans	Not having 1 child
Lifetime CO2 emissions saved: 486 tons	Lifetime CO2 emissions saved: 9441 tons

Source: Murtaugh & Schlex - Reproduction and the carbon legacies of individuals
Global Environmental Change 19 (2009) 14-20

The GAGND also toys with the idea of 'open borders' and, it would appear, some sort of right to settle (its final section). Yet, if logically applied, that would mean no nature reserves, no national parks, no green belts, no tribal reserves, no protection of flood plains from settlement, no protection of the best farmland, no restrictions on overcrowding and more: all depend on enforceable borders.

Thus, Amazonia is at risk precisely because there is such easy access for settlers as well as ranchers, miners and dam builders. The amazing Galapagos Islands are indeed under assault from vast Chinese trawling fleets but the most serious long term threat came from inward population movement from mainland Ecuador, one that would eat away, literally and metaphorically, the archipelago, even if global overheating were to be contained. For that reason, there is no 'open door' policy, with severe limits since 1998.¹⁰⁹ No real friend of the Earth would want to remove such controls. But that is what the GAGND stance implies.

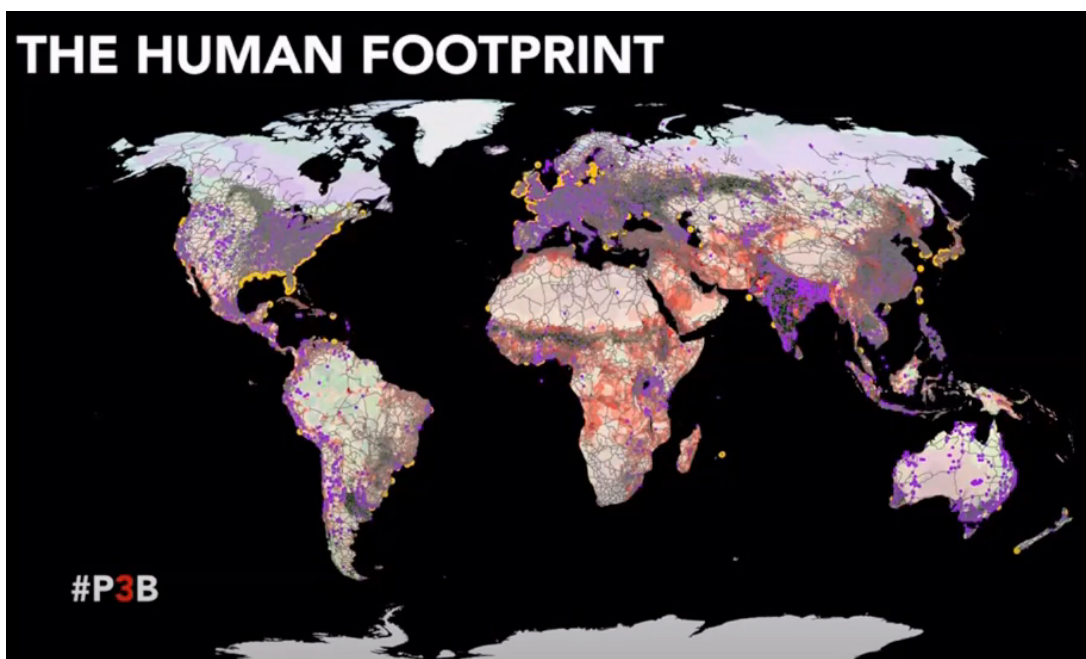
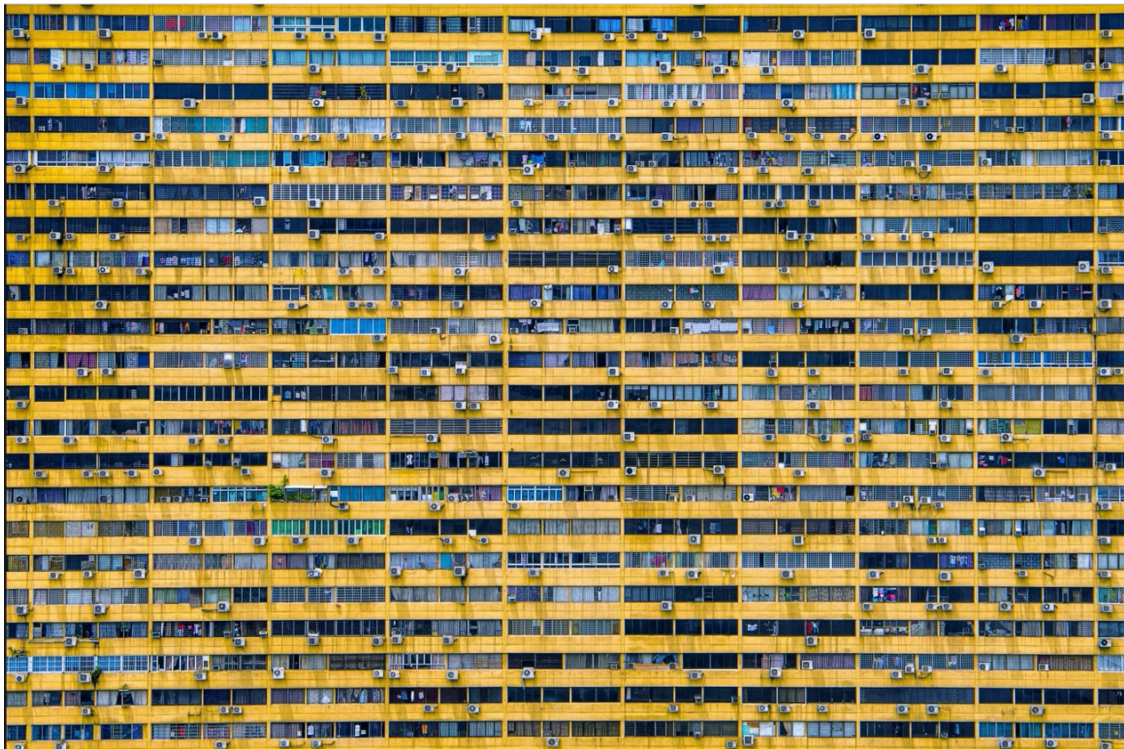


Image from the 'Population 3 Billion' website managed by Chris Tucker. There is very useful data there:
<https://planet3billion.com/maps-data.html>

¹⁰⁹ http://motu-www.motu.org.nz/wpapers/03_17.pdf



Favela de Rocinha Rio de Janeiro (top) and giant housing block in Singapore (bottom). It might be wondered how much land, energy and materials would be required to give people living in such places the same level of accommodation (and material comforts) of those who deny there is any problem with human numbers.



A chronic inability to see that human numbers count — and count decisively — pervades many 'progressive' movements, including the ranks of Green New Dealers

13. Social Justice and Sustainability

The GAGND assumes direct and necessary connections between, on the one hand, notions such as justice, equity and fairness and, on the other, ecological sustainability. There are indeed links and they have long been recognised amongst proponents of the sustainable common good, contrary to what some ‘progressives’ allege.¹¹⁰ To put the matter briefly, to avoid ecological collapse we need to bake a smaller economic ‘cake’ and it will be more palatable if portions are shared out fairly.

But notions such as ‘justice’ and ‘equality’ present a minefield, even if it is easy to shout them as slogans. For example, it would tick the ‘justice’ box to try and give everyone the same material standard of living as, say, the typical Californian. Yet it would lead to the equality of the grave since any such attempt would well and truly destroy the planet’s capacity to sustain life as we know it.

Redistribution can be ‘just’ too. By itself, it may well be desirable on moral grounds. Yet it does not make the fundamental problems go away. A society in a state of ecological overshoot is like a ship sinking due to being overladen. Moving around the weight on board — the oft-voiced call for ‘redistribution’ — may buy a bit of time but it will not save the vessel. In any case, gains from redistribution will be swallowed up if there is on-going physical growth.

There are also other specific problems. If we take just food, for example, there are genuine limits in terms of collection, long distance transportation, long-term storage (including energy-intensive refrigeration), distribution, including possible negative effects on markets for local farmers, and dietary preferences. It is, then, absurd to take some estimate of global food output and then divide that figure by the (still growing) number of mouths in the world. In any case, that apparently big total output rests on grossly unsustainable forms of production that are effectively undermining their own foundations, not least via soil erosion and denitrification.

There are many good grounds for exploring new forms of farming but they do not reduce the need to cut demand (ie an explicit goal of fewer consumers consuming largely plant-based diets). In particular, low-input farming cannot be high output since the laws of energy and matter mean that (physical) more cannot be gained from less.¹¹¹ Here, the GAGND takes refuge instead in fanciful rhetoric about “agricultural policy powered by clean energy”. It does not mention the one thing that really would make more food available, a largely plant-based diet. Reductions in food losses and sheer waste would certainly help too, though perhaps we have again to be sanguine about what might be achieved in practice.¹¹²

There is another general problem here. Under the banner of ‘social justice’, campaigners, especially those from ‘identity groups’, are producing ever lengthening lists of entitlements. They include demands such as the ‘right to internet access’ (BBC website, 08/03/10) as well as free dental care (Green Party policy). The GAGND seems to endorse some ‘right to work’,

110 Thus, back in the 1940s, Frank Fraser Darling, famed for his 1969 Reith Lecture ‘Wilderness and Plenty’ had condemned inequities in land ownership pattern in the western Scottish Highlands. In their 1971, book, ‘How to be a Survivor’, Paul Ehrlich and Richard Harriman roundly condemned the existence of a ‘steerage’ class on ‘Spaceship Earth’. In his 1973 study of steady-state economics, Herman Daly made a 10:1 limit on differentials one of the three pillars of a steady-state economy. It is blindingly obvious that poorer communities routinely suffer the worst in terms of pollution toxic waste dumping, overcrowding, clearance to make way for new roads etc, poor food, limited educational opportunities, un- and under-employment, shorter life expectancy etc.

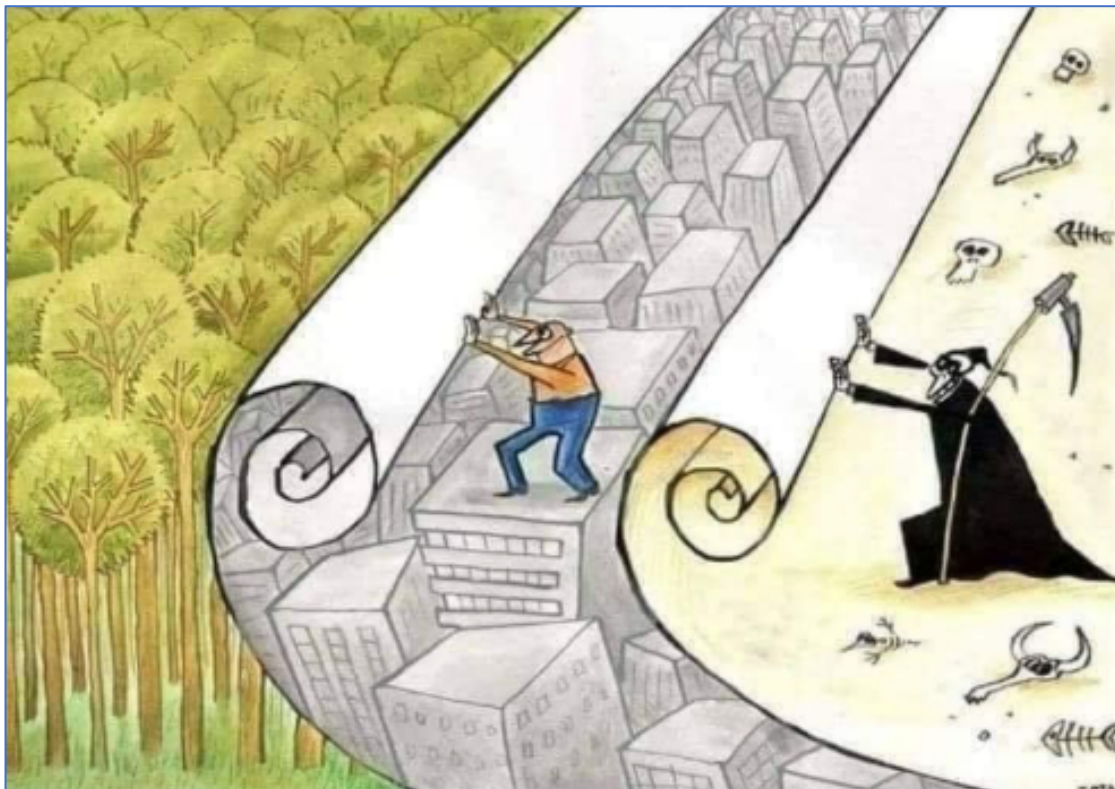
111 In many sectors, not just food consumption, we might, of course, get more non-physical satisfaction from less such as the pleasures of eating tasty food in convivial company or the enjoyment of peace and quiet. But most still depend on physical wherewithal and therefore can but encounter limits of growth. The author could not imagine life without the pleasures of music, for example, but that still needs instruments, hi-fi, rehearsal rooms, concert halls etc. Even singing in the shower assumes there is a shower!

112 https://www.treehugger.com/wasted-food-compounds-climate-change-study-shows-5195636?utm_campaign=treehugger&utm_medium=email&utm_source=cn_nl&utm_content=24653101&utm_term=

though there is much work that many people refuse to do (picking crops etc). Overall, there is a general absence of any ecological costing of what such 'social justice' would mean.

Pursuing its social justice theme, the GAGND advocates "publicly-owned technologies freely available to countries around the world". That needs unpacking. At first sight, it even seem to imply widespread nationalisation. Perhaps, instead, it means the abolition of patents. Nothing is 'free', however. Someone somewhere has to pay, if only via general taxation (as in the case of publicly run health services, 'free' at the point of use). There are a lot of promises in the GAGND but little indication of how they could be sustainably translated into practice.

Then there is the little matter of technological choice. What is to be "transferred"? Genetically modified organisms? Plastic polyculture? Fish farms? A computer for every desk? HEP dams? High-speed train lines? An electric car for every home? Nuclear power? Nanotechnology?... There is little sense of what is appropriate and what will be the impact of making a technology now used by some people available for everyone. It is a grave defect in GAGND thinking.



14. Economic turn

The GAGND talks of “new measures of progress”, “significant investment” (presumably public), a “focussing (of) resources”, “prioritis(ing) people and the planet over profits” (presumably private), a “channel(ing) of investment”, “an end to the “undermining (of) public services” and renegotiated trade agreements under “reformed” international bodies. The more specific measures mentioned include: a “job guarantee”, a “living wage”, a “wide range of training options”, with, internationally, “debt cancellation”, an “end (to) tax havens”, a crackdown on tax evasion by transnational corporation and the blocking of “capital flights”.

Much of what is said seems quite reasonable, not least the closure of tax loopholes¹¹³ and relief from the crippling level of debt servicing.¹¹⁴ But closer scrutiny suggests that potential constraints are being swept under the carpet in a wave of heady rhetoric. This is coupled to significant vagueness. It is not clear, for example, whether that means systematic controls over the movement of capital. There are promises of “plans” but scant detail.

The Declaration has little to say about ‘reformist’ measures such as Cap-and-Trade, including the EU Emissions Trading System. They are essentially worthless.¹¹⁵ The GAGND focuses on the use of Special Drawing Rights to ‘level up’ poverty-stricken regions outside the rich heartlands. It does not reflect on what this might mean in terms of an overall growth in human demands on ecological systems.

Rather surprisingly, there is no mention of an obvious policy: big cuts to the subsidies and other support for unsustainable activities. Indeed, most environmental destruction is actually heavily underwritten by the public purse: fossil fuel industries, industrial fishing, chemicalised monocrop farming, ‘welfare ranching’,¹¹⁶ aviation, road construction ... The nuclear energy industry, for example, only exists thanks to strong state support. Such support extends to ‘baby bonuses’ and other financial incentives to have more children. Most of these subsidies are actually far higher than often suggested since estimates usually do not include the cost of ‘externalities’ that such industries are allowed not to pay.

As with most ‘anti-capitalist’ campaigning, there seems to be assumption that the public sector is, ipso facto, superior to the private one. “Public services” covers a huge range of activities, some genuinely vital, others perhaps less so. The armed forces are, of course, a public service and, other matters aside, a huge consumer of resources and emitter of greenhouse gas emissions.¹¹⁷ It is not clear whether cuts to public spending in this bloated sector are part of the plan.¹¹⁸ Diesel buses too were a “public service” pre-privatisation in the UK, while many bodies promoting conventional (and unsustainable) economic development are part of the public sector. So too is tourism promotion, often fostered with scant consideration of environmental impacts.¹¹⁹

113 <https://taxjustice.net/2020/11/20/427bn-lost-to-tax-havens-every-year-landmark-study-reveals-countries-losses-and-worst-offenders/>

‘Global Britain’ is the major sinner in these respects:

<https://www.newstatesman.com/business/companies/2021/04/what-global-britain-really-means-tax-avoidance-unprecedented-scale>

At a company level, ‘Big Data’ corporations are big offenders:

<https://fairtaxmark.net/silicon-six-end-the-decade-with-100-billion-tax-shortfall/>

Remember such estimates deal only in money. They say nothing about the crucial flows of energy and matter, the real currency of nations.

114 Eg <https://jubileedebt.org.uk/press-release/sixty-four-countries-spend-more-on-debt-payments-than-health> ; <https://sdgpulse.unctad.org/debt-sustainability/>

115 <http://www.thecornerhouse.org.uk/resource/green-color-money>

116 https://www.biologicaldiversity.org/programs/public_lands/grazing/

117 <https://www.sgr.org.uk/resources/carbon-boot-print-military-0>

118 <https://www.sipri.org/media/press-release/2021/world-military-spending-rises-almost-2-trillion-2020>

119 In the UK, this still includes road-based tourism schemes despite all the government rhetoric about climate action eg <https://www.scotsman.com/news/environment/concern-over-environmental-impact-north-coast-500-route-1438635>

More generally, see:

All this implies a high level of state intervention, with, it would appear, considerable degree of social ownership and public planning. In the form of nationalised industries, public ownership has routinely left a lot to be desired. There are certainly cases where a public system has been superior to a private one, not least in the field of health care. Clearly, a public transport network is easier to integrate compared to a fragmented privately owned one.

But there can be real downsides. In many public sectors, there has been a history of general unresponsiveness to consumer needs, let alone sustainability criteria well as serious inefficiencies and indeed ruinous blunders, even when well-intended.¹²⁰ That include meaningless box-ticking and blatant false accounting, evident in many official climate action plans for example.



15. The Best Laid Plans...

Planned economies have actually been more devastating than so-called mixed economies, be it the USSR¹²¹ or China.¹²² In terms of particular organisations, some of the worst environmental destruction has similarly been perpetrated by public bodies, not least the American Army Corps of Engineers, state owned forestry bodies, public drainage boards, public utilities including hydro companies and more. Nuclear power is still a radioactive white elephant whether “public-owned” or not. Some of the least safe plants are actually in state hands, including France’s ‘fleet’ of reactors.¹²³ The world’s most disastrous programme, China’s Belt and Road Initiative,¹²⁴ is a state enterprise.

<https://www.theworldcounts.com/challenges/consumption/transport-and-tourism/negative-environmental-impacts-of-tourism/story>

We now have ‘space tourism’: <https://theswaddle.com/what-is-the-environmental-cost-of-space-tourism/> and <https://www.theguardian.com/science/2021/jul/19/billionaires-space-tourism-environment-emissions>

¹²⁰ <https://oneworld-publications.com/the-blunders-of-our-governments.html>

¹²¹ As documented by Anne Applebaum, Zhores Medvedev, Boris Komarov and many more.

¹²² See the works of Frank Dikötter, Judith Shapiro, Vaclav Smil and again many more.

¹²³ <https://www.popularmechanics.com/science/energy/a33499619/france-nuclear-reactor-epr-expensive-mess/>
<https://theecologist.org/tag/france>

¹²⁴ <https://news.mongabay.com/2018/04/chinas-belt-and-road-poised-to-transform-the-earth-but-at-what-cost/>

The problem goes beyond totalitarian regimes since fundamental problems have been encountered in more democratic countries (eg France's 'dirigisme'). There are in reality intrinsic drawbacks to any form of planning and, the more centralised it is, the worse they can become. There are, for example, real difficulties with accurate data collection, analysis, trend projection, technical competence, and general co-ordination as well as barriers such as bureaucratic inertia, narrow 'target culture', tunnel vision and 'groupthink'.

At first sight, computerisation could solve some of the data processing problems. But energy and raw material barriers are likely to limit computerised planning. In any case, many problems are not about a shortage of facts or inadequate number crunching. They are matters of interpretation as well as conflicts of values and priorities. The 'greenest' computers can provide few, if any, answers here.

There will be those who point to, say, the quite remarkable feat of the moon landings as evidence of the efficacy of planned programmes under the guiding hand of the state (sometimes put thus: "if we can put a man on the moon, surely we can easily solve problem X or Y down here on Earth"). British MPs Caroline Lucas and Clive Lewis apparently called the GAGND a "moon shot moment".¹²⁵

Yet this argument is not comparing like with like. The Apollo programme was a single technological task, albeit a very difficult one, and, almost uniquely, one supported by strong national consensus and very generous resourcing, using a lot of pre-existing technology. Such favourable factors do not apply when it comes to many Earthly problems, where there are a mass of conflicting goals, priorities and vested interests as well as technological barriers.

In any case, landing a man on the moon did not do much to improve the lot of most people and all other species back down on Earth. But, of course, faith in technology is very much the modern religion. It led John McDermott to call it the 'opiate of the intellectuals', though I suspect that the drug is taken by many other sections of society too, perhaps including some Green New Dealers too.¹²⁶

Of course, planning has its advantages too: greater opportunity to limit unnecessary product differentiation, to reduce the unnecessary and/or wasteful production, and to concentrate resources where they are most needed. The speedy conversion of car production to weapons manufacture in the USA after Pearl Harbour illustrates what can be done when there is political will. But it must be developed and applied *within* ecological parameters. Limits to growth constraints apply to planning as, indeed to all else.¹²⁷

125 <https://www.businessgreen.com/news/4034612/moonshot-moment-uk-mps-join-global-alliance-green-deal>

126 <https://www.nybooks.com/articles/1969/07/31/a-special-supplement-technology-the-opiate-of-the/>

127 See:

<http://duaneelgin.com/the-limits-to-complexity-are-bureaucracies-becoming-unmanageable/>

and chapter 8, 'Law of Government Size' here:

<https://www.chelseagreen.com/product/human-scale-revisited/>

The 'Green New Deal' agenda often features items about popular planning and participatory budgeting. Yet when large numbers are involved, it is hard to see how there can be meaningful participation. Think how long it takes for everyone to make a contribution on a small committee. 'Apathy' is another problem. Many people have no taste for endless meetings. Then some people get involved to get just what they want then disappear. Both seem to be factors in the decay of participatory budget-making not least in its home city of Porto Alegre:

<https://www.internationalbudget.org/2019/11/paradise-lost-the-crisis-of-participatory-budgeting-is-its-own-birthplace/>

There are also issues of expertise. All sorts of issues from financial management to land use planning are complex, requiring a great deal of knowledge and experience to make sound decisions. It is hard to see how a rational transport network could emerge from lots of little local decisions. Conversely, the few experiments in 'direct democracy' have sometimes been unhappy ones. It might also be remembered that many 'intentional communities' and workers co-operatives have imploded because of internal problems, including the Owenite ones in 19th century USA. Many suffered from tyrannical individuals and cliques. A further problem can come from those who just sponged off the labours of others, the so-called free-rider problem (many of us use Wikipedia but pay nothing towards it!).

Once again, we need to avoid glib sloganeering about 'empowerment' and 'participation', grappling instead with some difficult barriers.

The posing of dichotomies of public vs private and of planning vs market, avoid the bigger questions of scale and purpose. Some things, most of all ‘natural monopolies’, inherent unities such as water and railways lines, are indeed likely to be better run with one hand in control and, usually, public ownership is preferable to a private monopolist. But many other things are best controlled in other ways, from land trusts and community interest companies to, yes, pure for-profit private enterprise. To give a perhaps frivolous example, which is better: several privately real ale micro-breweries serving primarily a local market or one monolithic publicly owned mega-brewery?¹²⁸

The big issues remain those of scale and actual content.

16. A caring economy?

The GAGND places great emphasis on education and health. It pledges “free education from early children to higher education” for all potential beneficiaries across the planet. It would require colossal public spending and a vast programme of building, along with an enormous increase production of all sorts of other physical resources for classrooms. The world’s existing universities alone generate significant carbon emissions.¹²⁹ It is a moot point whether there is even the trained staff to deliver such a goal.

At the same time, the parallel commitment to “universal health care” begs a lot of similar questions about funding, staff, physical resources and environmental impact. Hospitals, for example, consume large areas of lands, often on greenfield sites. They are energy-intensive buildings.¹³⁰ According to NHS figures, the health and care system in England is responsible for an estimated 4-5% of the country’s carbon footprint. 6.7 billion road miles each year are from patients and their visitors travelling to and from NHS facilities. In the USA, hospitals generate over 29 pounds of waste per bed per day. Some of that, roughly 15%, is hazardous (infectious, chemical, radioactive). According to the WHO, high-income countries generate on average up to 0.5 kg of hazardous waste per hospital bed per day; while low-income countries generate on average 0.2 kg. Much of this goes to incineration, itself a hazardous activity.

The negative impacts of health care do not, of course, just come from hospitals. There are also big networks of research laboratories, blood banks, pharmaceutical manufacturing plants, nursing homes and, last but not least, mortuaries. Most need intensive cleaning. Then there is all the bureaucratic activities such as personal health files and insurance matters, much of it now computerised. All consume land, energy and raw materials. All generate wastes.

To be sure, “universal health care” is a worthy aim and, thankfully, major improvements can be achieved by comparatively simple means such as clean water, better sanitation and improved diets. For many people now, especially in cities, less sedentary lifestyles also yield big health dividends. But those negative impacts from health care facilities will not disappear just wishing them away.

¹²⁸ Actually, there was one in my city of Newcastle, the ‘Fed’ brewery. Its beers were full of gas and terrible in taste.

¹²⁹ <https://enveurope.springeropen.com/articles/10.1186/s12302-021-00454-6>

¹³⁰ Apparently in Brazil, hospitals account for 10% of the country’s energy consumption.



Hospital in China

Similar observations could be made about most other likely constituents of a 'caring economy': social care, housing, education, libraries, museums, galleries, sports and assorted leisure pursuits, from informal gardening to mass tourism. All come with frequently big ecological as well as economic price tags. Those costs are all multiplied the bigger the number of users, ie the population factor about which the GAGND is so silent.

Some advocates of a more caring, indeed liberated society would appear to have a vision of some leisure society in mind. Yet it too is not necessarily any the more sustainable than currently dominant lifestyles. Tourism, for example, is, by some measures, one of the world's biggest industries (it depends on what is included under that heading, hence the difficulty of precise ranking). Sport and other organised leisure too are big business, with big impacts. Having a leisurely drink can have significantly unsustainable impacts.¹³¹

There are, for instance, over 700,000 hotels and resorts worldwide. All consume land as well as much energy and assorted raw materials, including water, in their construction and operation. Huge areas of forests have been cut down just to make way for an estimated 60,000 km plus of ski slopes, with over 23,000 ski lifts. Huge stretches of coastline are now concreted over for hotels and other tourist infrastructure. Even sun motion lotion is a pollution problem in many such areas, something that again brings the issue back to numbers.¹³² Meanwhile, many popular footpaths are suffering from erosion due to the impact of too many feet.

¹³¹ https://www.nationalgeographic.com/environment/article/how-to-brew-a-greener-beer?utm_source=ActiveCampaign&utm_medium=email&utm_content=Top+news%3A++ATF_LEAD_STORY_TITLE&utm_campaign=ATF+Daily++Outlook

¹³² <https://www.theguardian.com/environment/2021/aug/06/lotion-in-the-ocean-is-your-sunscreen-killing-the-sea>



Caring for leisure 'needs', USA-style

Of course, like so many things, new ways of living could mean a higher or lower overall human impact. Gardening, for instance, might mean 'perfect' lawns and lots of exotic plants, all chemically saturated. But it might also mean a shift to the use of gardens for food production or as havens for beleaguered wildlife such as hedgehogs, frogs, bees, butterflies and birds. Live music might mean distant giant distant stadia. But it could take place in local, small-scale venues. Leisure time could be used for more home cooking instead of dependency on processed food from giant supermarkets.

Overall, however, it would be honest to recognise that changes such as shorter working week and more leisure time might not necessarily mean a new deal in terms of the sustainable common good.

17. 'Market Fundamentalism': A Mythical Beast

The GAGND follows the common practice in conventional left-wing politics of blaming the "system", be it 'capitalism', 'neo-liberalism', 'neo-colonialism' or an 'Empire' (as Hardt and Negri have termed what they see as a new global system). An alternative formulation is even narrower: it is the 1% vs the 99%, a notion popularised by the Occupy! movement. Thus indicted is an incredibly tiny band of people whose luxury living and control over resources are the fault.

Much blame is particularly attached to 'Neo-Liberal Economics' (Hayek et al). It is not clear what exactly is this creature. After all, the world was actually more 'liberal' in the decades prior to World War One, when there were far fewer controls over the movements of people and capital. The modern world is scarcely liberal. Indeed the major force reacting against 'modernity', religious fundamentalism, is far more illiberal, not least in terms of the oppression of women. On a more ideological front, 'postmodernism' and now an aggressive and sectionalist 'identity politics' have undermined a lot of what was 'neo' when the likes of Margaret Thatcher and Ronald came to power.

The economy itself is scarcely a case of what some call 'market fundamentalism'. Economies around the world are awash with all sorts of grants, subsidies, 'boondoggle' contracts, gratis infrastructural support, granting of unwarranted planning exemptions, selling off of public

properties to favoured buyers, blind eyes turned to monopolies, toleration of tax evasion and so forth, all against the fundamental principles of truly 'free' market economic principles. True 'free market' fundamentalists (disciples of Ayn Rand et al) have scarcely any influence in terms of actual policy-making.

Today's billionaires got their wealth not by their own enterprise (though they are good at extracting monies from the work of others) but largely because of a great deal of state support.¹³³ Meanwhile, political control has been relentlessly centralised by governments, with the state playing a major part in many aspects of society. Thus, that arch-enemy of the state, Britain's Margaret Thatcher, relentless strengthened central state power, her privatisation programme notwithstanding. Many aspects of a truly liberal society are under threat, with one right after another being curtailed by politicians who masquerade as friends of the People.

Much else is in the hands of a very restricted group of oligopolies, where there is little real free competition. Often deregulation, ie relaxed or abolished public controls, has been replaced by de facto re-regulation but by a few power players who control fields such as information technology and artificial intelligence. Rivals are squeezed out by fair means or foul. At the same time, a narrow layer of 'players' in the fields of real estate and property development have taken control of what were free public spaces.¹³⁴

Terms such as 'neo-liberalism' scarcely capture the way that governments still play a major role (often bailing out 'too-big-to-fail' banks and other failing business enterprises) . Nor does it convey how a few corporations rig the markets for their own benefit.¹³⁵ The development is, of course, not confined to sectors dominated by the likes of Apple, Google, Facebook, or Amazon. Just look at corporate dominance of the world's food supply system, perhaps most dangerous in the case of seed monopolies.¹³⁶

To be fair, probably all GAGND signatories recognise the economic defects described above, from state feather-bedding of a favoured few to excessive corporate control, plus, of course, the related yawning inequalities in society. The problem is in part a lack of clarity. It is particularly important here, given the way the mainstream media routinely report economic matters in terms of 'market forces'. They are treated as some sort of natural phenomena, blowing this way or that just like the wind or as some neutral 'god'.¹³⁷ In reality, such 'forces' are not free competition at work but the product of politically created structures... and, of course, what people assemble can be reassembled in very different forms if there is the political will.

Another danger with the 'blame Neo-Liberalism' trope is that it can diagnose economic problems as solely emanating from within the economy. This can be seen with regards to the 2007-08 financial crash. To be sure, the 'bad bankers' and their ilk has been behaving with near mindless greed and utter social irresponsibility (partly made possible by Bill Clinton's repeal of Roosevelt legislation¹³⁸ to control the banks, who, in Britain, were lavishly praised by Gordon Brown, Labour's then chancellor in his 'Mansion House' speeches¹³⁹).

Yet a narrow focus on what was happening *inside* the economy can obscure the role of factors outside it. Critical were tightening constraints on oil production, a fundamentally finite resource.¹⁴⁰ They led to fuel price hikes which badly hit those on lower income commuters who

133 <https://oneworld-publications.com/the-trouble-with-billionaires.html>;

<https://policy.bristoluniversitypress.co.uk/why-we-cant-afford-the-rich>

134 https://docs.wixstatic.com/ugd/e87dab_c893a52a18624acdb94472869d942a09.pdf

135 <https://www.scientificamerican.com/article/the-american-economy-is-rigged/>

136 <https://www.dw.com/en/agriculture-seeds-seed-laws-agribusinesses-climate-change-food-security-seed-sovereignty-bayer/a-57118595>

137 <https://www.theatlantic.com/magazine/archive/1999/03/the-market-as-god/306397/>

138

https://www.salon.com/2016/05/17/bubbas_toxic_economic_legacy_when_hillary_brags_about_the_first_clinton_presidency_legacy_she_doesnt_want_you_to_remember_this/

139 For example: <https://www.theguardian.com/business/2006/jun/22/politics.economicpolicy>

140 <https://www.youtube.com/watch?v=IDNMjV6sumQ>

had big mortgages to pay off, setting in motion the collapse of the whole house of cards.¹⁴¹ Fundamentally, financial assets had become way too overvalued in relation to the real world of energy and raw material.¹⁴²

The trope is also a limited tool of analysis when it comes to political matters. ‘Conservative’ forces are political chameleons. They are not slavish creatures of ‘neo-liberalism’. Indeed a more rounded analysis would recognise that it is not tenable to just keep blaming ‘market fundamentalists’ and the ilk. Sections of what some label as the ‘Right’ have proved quite adept at reinventing themselves as critics of unrestricted markets (look at Donald Trump on ‘offshoring’) with a willingness to endorse significant state intervention. In the UK this helped to undermined the once Labour strongholds with a new breed of Tory such Teesside mayor Ben Houchen coming to the fore.¹⁴³ The former ‘red wall’ collapsed. We need more subtle responses to such phenomena.

18. No Return to Keynes

Many of today’s ecological crises pre-date Neo-Liberalism, no matter how we define the latter. Several arose in the era when post-war governments followed Keynesian policies (a mixed economy with anti-recession stimulus packages, etc). Thus, the so-called ‘great acceleration’, with deepening ecological recession, started around 1950.¹⁴⁴ Serious symptoms of growing unsustainability began to manifest themselves in various ways.¹⁴⁵

One was pesticide pollution, with Rachel Carson sounding the alarm call in 1962 with her book ‘Silent Spring’. Another was a growing number of serious oil pollution incidents such as the ‘sinking of the Torrey Canyon’ and the Santa Barbara oil spill (respectively 1967 and 1969). The London killer smog was back in 1952, the Minamata mercury poisoning was underway by then, while the infamous the Cuyahoga River fire (Ohio) happened in 1969.

More serious in many ways was the greatest land use planning disaster ever, the growing tide of suburban sprawl.¹⁴⁶ It could be said to have been kickstarted by the launch of Levittown in the USA in 1947 (aided by the socialistic Housing Bill of 1948).¹⁴⁷ America had already been ‘carjacked’ by the 1960s, with most other countries fast following.¹⁴⁸ The creation of the ‘asphalt nation’ was indeed well on the road.¹⁴⁹

Attention today is particularly focused on the climate emergency. But the fires of global overheating were being stoked long ago, while warnings about the danger also go back decades. For example, both a New Zealand newspaper and the magazine ‘Popular Mechanics’ commented in 1912 on the likely blowback from burning fossil fuels. Other warnings came from scientists such as Guy Stewart Callender (1938) Gilbert Plass (1955) and Roger Revelle (1956). Indeed the issue made prime time TV in the mid-1970s (‘Jonny Carson show 1976) while an overheated planet was the background to the story of the 1973 movie ‘Soylent

141 The connections were well made here: <https://richardheinberg.com/bookshelf/the-end-of-growth-book>

142 <https://rs.resalliance.org/2008/10/09/herman-daly-on-the-financial-crisis/>

143 <https://www.theguardian.com/commentisfree/2021/may/08/houchenism-the-brand-of-can-do-tory-threatening-the-left-and-right-old-guard>

144 <http://www.igbp.net/globalchange/greatacceleration.4.1b8ae20512db692f2a680001630.html>

145 Some sharp-eyed observers spotted the growing dangers in the late 1940s when the ‘left’ and the ‘right’ were fixated on rapid growth, be it via the state or the private enterprise eg

<https://www.nature.com/articles/164003c0> (William Vogt)

<https://www.journals.uchicago.edu/doi/abs/10.1086/625703> (Fairfield Osborn)

<https://catalog.hathitrust.org/Record/001312715> (Samuel Ordway)

<https://www.aldo Leopold.org/about/aldo-leopold/sand-county-almanac/>

146 <https://www.yumpu.com/en/document/read/38728108/the-death-of-sprawl-common-current> ;

<https://kunstler.com/books/the-geography-of-nowhere/>

<https://www.nature.com/scitable/knowledge/library/the-characteristics-causes-and-consequences-of-sprawling-103014747/>

<https://www.treehugger.com/new-studies-measure-true-cost-sprawl-and-its-more-you-think-4856771>

147 <https://www.planetizen.com/definition/levittown>

148 <https://us.macmillan.com/books/9780230102194>

149 <https://www.ucpress.edu/book/9780520216204/asphalt-nation>

Green'. In other words, the build-up of greenhouse gases was happening long before 'financialisation', outsourcing or deregulation.

One of the major drivers of all these assaults against the Earth had long been in place: the technologies associated with fossil fuels and synthetic chemicals. But another, consumerism really came to dominate society in the Keynesian era of the 1950s (cars, TVs, many other household appliances, shopping malls, motel chains, fast-food outlets...). The third driver, population, also truly took off after World War Two with the post-war baby boom.¹⁵⁰ This bulge multiplied all existing impacts on the Earth, with population momentum helping to maintain the pressure.¹⁵¹

The scale of all these problems in the Keynesian Era led to a spate of publications in response at the time, eg Barry Commoner's 'The Closing Circle' (1971), 'How To be a Survivor' (Ehrlich and Harriman, 1971), and, in 1972, 'Limits to growth' and the Blueprint for Survival'. Indeed it is instructive to compare the content of that last document (and Herman Daly's 'Steady-State Economics' from the following year) with the ideas of all the Green New Deals.

It also triggered the formation of pressure groups such as Greenpeace, Friends of the Earth and the Club of Rome, new political parties (eg United Tasmania, New Zealand's Values Party, and the UK's People). Then there were regional campaigns such as the fight in the 1960s against the soap and detergents industry (eg its pollution of the Great Lakes). There was even a TV drama series, the BBC's 'Doomwatch' (1970-1972) while, before, Tom Lehrer was singing about 'pollution' (1965). Concern came to a head at the first 'Earth Day' in 1970 then the UN's 'Only One Earth' summit in Stockholm two years later.

Policies based on a mixed economy, a welfare state, maintenance of near-full employment, and especially promotion of economic growth either failed to address the huge increase in the human footprint over the course of the period from late 1940s to the mid-1970s or actually helped to increase an already unsustainable burden on planet Earth. Neo-liberalism (in the sense of deregulation, privatisation, 'internal markets' inside a reduced public sector, precarity-promoting policies regarding employment law, and major tax cuts for the rich, etc) did indeed intensify some of these pressures but it cannot be solely blamed for them.

We need a radically different economics, not turquoise Keynesianism.

19. Power to the People

In line with its underpinning 'social justice' agenda, the GAGND plays with a certain leftist populism that gushes about 'empowerment' ("a truly democratic future in which everyone has a role to play"). Part of this orientation is the call for citizens assemblies as a driver of sustainability initiatives as well as reforms to the parliamentary system such as the introduction of proportional representation to reflect more faithfully the people's will. "Truly democratic" would also mean action to curtail the corruption of democracy by monies from super-elite individuals and groups (Koch Brothers etc) as well as the currently corrosive influence of corporate lobbyists.

Such populism extends to the trade unions. The GAGND says "we will strengthen the labour movement... working to advance worker power". Here, rhetoric takes wing and soars into a fantasy stratosphere. The reality is the most unions are steadfastly committed to business-as-usual in its essentials. Some unions may pass conference resolutions that talk of creating vast numbers of 'climate jobs'. There is, indeed, a lot of '*resolutionary* socialism' in the labour movement and general grandstanding by trade union leaders.

In practice, however, most unions back airport expansion, road building, and high speed railway line construction and, in some cases, nuclear power. In the USA, unions are a driving

¹⁵⁰ <https://www.pewresearch.org/global/2014/01/30/chapter-4-population-change-in-the-u-s-and-the-world-from-1950-to-2050/>

¹⁵¹ <https://populationeducation.org/population-momentum-why-populations-keep-growing/>

force for continued coal mining. Generally, trade unions push for rapid economic growth. Sometimes, they back specific reactionary causes.

For example, the strongest expression of direct 'workers power' in recent decades in the UK was arguably the Ulster Workers Council strike in 1974... in favour of maintaining religious discrimination. No justice there! One of the biggest walkouts by workers was that by London dock workers and meat packers in 1968... in support of the racist politician Enoch Powell. No equality there!

Of course, it is really good to see sustainability initiatives amongst unions but their impact has in reality been limited.¹⁵² But it is dishonest to pretend that a strengthened labour movement will most likely lead to the kind of measures needed to protect the Earth. On the contrary, some unions, with rank and file support, will be on the other side of the 'barricades', perhaps in the manner of the 2020 strikes by fuel tanker drivers or the Bonnets Rouge in France. A government genuinely committed to climate action and so forth would need plans to deal with such eventualities rather than naively trust in 'workers' power'.¹⁵³

Indeed, in terms of empowerment in the form of referenda, the 'People' have routinely backed anti-Earth policies, variously rejecting measures to limit car driving (eg congestion charges) or fairer trade and more sustainable agriculture.¹⁵⁴ The vote for Brexit owed much to support from members of the "labour movement".

The GAGND prefers to ignore the wise old adage about being careful what you wish for in its unqualified advocacy of 'empowerment'. Clearly, positive changes are more likely to happen and be sustained if those affected feel they have been properly consulted and their needs adequately taken into account. But we have to step carefully, frankly recognising possible pitfalls.

20. North vs South?

The GAGND talks of a 'Global South', a bloc of 'undeveloped' or 'maldeveloping' countries which it implicitly contrasts with an economically developed 'North'. Sometimes, it is just expressed as "rich countries" versus "poor countries".¹⁵⁵ Such political geography is badly flawed. To be fair, parts of that picture shed light but others obscure reality.

For a start, as the diagram below depicts, many countries with a highly unsustainable ecological footprint are to be found in the Middle East and Far East. A focus on *pollution* (what we add *to* the environment) can disguise the impact of *environmental degradation* (deforestation, soil erosion, desertification, destruction of biodiversity, etc, and often not as well documented as specific pollutants) in countries in what used to be called the 'Third World'. It is, then, inadequate to focus only on statistics that show the average American is responsible for 'x' times more CO₂ than the average African, in itself a statement of undeniable fact.

A whole range of ecological impacts has to be taken into account. Rice farming in the 'South', for example, has major climate impacts.¹⁵⁶ Some of the worst aquifer depletion is on the north plain of China.¹⁵⁷ SE Asia is probably the world's worst wildlife extinction hotspot.¹⁵⁸ 21 of the

¹⁵² This one is certainly very worthy but its impact does not seem great:

<https://www.fseee.org>

¹⁵³ Remember that the transition to ecological sustainability will involve higher energy prices plus measures to enable people to live comfortably on less energy via subsidised home energy conservation measures

¹⁵⁴ Eg <https://www.swissinfo.ch/eng/vote-results-june-13-2021-switzerland-co2-pesticides/46631396>

¹⁵⁵ Naomi Klein is typical:

https://theintercept.com/2021/07/23/stuck-in-the-smoke-as-billionaires-blast-off/?fbclid=IwAR0CL_L0Inq5Er1su4LVm-bVHS6PvHORvvcPiF_1q0k0Bx-y3dTKNL9KrvI

¹⁵⁶ <https://www.independent.co.uk/climate-change/news/rice-farming-climate-change-global-warming-india-nitrous-oxide-methane-a8531401.html>

¹⁵⁷ <https://www.chinawaterrisk.org/the-big-picture/groundwater-depletion/>

¹⁵⁸ <https://news.mongabay.com/2019/12/time-is-running-out-for-southeast-asia/>

world's 30 cities with the worst air pollution are in India.¹⁵⁹ Of the worst ten polluting power plants, six are in China and East Asia, two in India and two in Europe.¹⁶⁰ In other words, the whole ecological crunch is not being caused just by seemingly rich lands such as the USA and UK.

A country such as China with comparatively low per capita physical consumption nonetheless generates a big footprint, largely due to its enormous population but also and increasingly so the growth there of a big middle class. Currently, the country as a whole uses up each year the equivalent of 1.5 planets.¹⁶¹ Another estimate notes that if all the world's population lived like China, we would need 2.2 Earths.¹⁶²

It is, of course, a very common trope that such figures simply reflect Chinese exports to the markets of rich countries. In reality, Chinese production has swung towards the domestic market, especially in the aftermath of Covid.¹⁶³ Already, it is home to the world's biggest shopping malls¹⁶⁴ and to the fastest growing ownership of SUVs.¹⁶⁵

The dichotomy of a rich North vs a poor South also ignores the explosive growth of the "new middle class" across Asia, Africa and Latin America.¹⁶⁶ Arguably, it is their consumption that is now breaking the Earth's back. Certainly it underlines the extent to which the GAGND and indeed large sections of the whole green movement as well as more traditional Leftists are dealing in out-of-date geography.



India's space programme

¹⁵⁹ <https://www.iqair.com/world-most-polluted-cities>

¹⁶⁰ <https://www.independent.co.uk/climate-change/news/emissions-energy-power-plants-carbon-dioxide-b1894005.html?amp>

¹⁶¹ <https://www.zujiwangluo.org/ecological-footprint-results/>

¹⁶² <https://www.footprintnetwork.org/resources/data/2018-national-footprint-accounts-guidebook/>

¹⁶³ http://www.xinhuanet.com/english/2020-05/09/c_139043909.htm

¹⁶⁴ <https://www.chinahighlights.com/travelguide/article-top-10-china-malls.htm>

¹⁶⁵ <https://www.chinadaily.com.cn/a/202007/09/WS5f06da69a310834817258656.html>

¹⁶⁶ https://www.brookings.edu/blog/future-development/2018/09/27/a-global-tipping-point-half-the-world-is-now-middle-class-or-wealthier/?fbclid=IwAR0oIHq-iTyOOauAe-XgQVgl_lkbXoDTtpPd9LkPRQmFDVSRKh_reksf_g ; <https://www.bbc.co.uk/news/business-13845032>;

https://www2.deloitte.com/content/dam/Deloitte/ar/Documents/Consumer_and_Industrial_Products/Global-Powers-of-Luxury-Goods-abril-2019.pdf?fbclid=IwAR0OwN5lj7Rrc1Vwg1fYGxqKfSFZ53PUoZw0u3ek_tXitG9tzH4jAKnY4AU



Tuoketuo coal-fired power station in China, the world's largest.

Country Overshoot Days 2021

When would Earth Overshoot Day land if the world's population lived like...



Source: National Footprint and Biocapacity Accounts, 2021 Edition
data.footprintnetwork.org



*There is indeed gross inequality both between and within countries.
But countries in 'overshoot' are not confined to the so-called 'North'.*

Within countries of “North’ and ‘South’ there are huge differences in wealth and power. Exploitation, oppression and exclusion are scarcely the preserve of international relations. Such scars can be found in countries around the world and are often rooted in local power structures and indeed local cultures, religion often being a particularly malign factor. But many ‘progressive’ organisations, not just the GAGND, are reluctant to speak out about the oppression and exploitation inflicted on poor peoples by forces *within* their lands. That includes brutal oppression of women (FGM, child brides, foot binding,¹⁶⁷ mass rapes¹⁶⁸ etc) as well as popularity of animal body parts medicine or diets composed of local wildlife.¹⁶⁹

Nor are colonialism / imperialism a peculiarly European or American phenomena. Going back in history the biggest and most destructive was the empire created by the Mongol warlord Genghis Khan.¹⁷⁰ Before the coming of the Conquistadores tribal peoples across Latin America were the victims of the Aztec and Inca Empires. The Zulu empire covered much of southern Africa before the British carved out their domain.

To be sure, colonial powers such as Britain, France, Spain, Portugal, Holland, and Belgium did great harm, warping the economies of the colonised lands as well as perpetrating some terrible atrocities. But it has to be noted how often local forces allied with the new arrivals in the hope of settling old scores in their region. Indeed it is hard to see how the European powers could have been so successful without such support. History is more complex than a simple framework in which Europeans just sweep across the planet, with everyone else merely a victim.

That legacy lives in, perhaps most forcefully within the international trading agreements. The GAGND is right to suggest their radical revision. Given the raw material requirements of the renewable energy revolution advocated by the GAGND, there is, however, an unaddressed danger of new forms of colonialism, with countries across Asia, Africa and Latin America hosting environmentally destructively mines.¹⁷¹ Working conditions are routinely appalling and, frequently, there is brutal exploitation of child labour. GAGND may sincerely want to address those human aspects but it is hard to see it happening quickly and, in any case, it will not change the ecological ruination.

21. Own Goals

For all the rapacious behaviour of transnational corporations and the failings of bodies such as the World Trade Organisation, the GAGND is wrong to ignore the harm and destruction being caused by forces within the so-called ‘South’. It is, then, too simplistic and hinders proper understanding of the threats the whole Earth, rich and poor. It also talks of ‘climate reparations’, though there is no explanation of who is going to pay what to whom. Part of this perspective is the assertion that the ‘North’ should pay ‘reparations’ to the ‘South’ and especially former colonial lands.¹⁷² This is sometimes extended to matters such as slavery.¹⁷³

Lurking beneath such arguments is another assumption. It goes something like this “we have no right to stop ‘developing’ countries from cutting down their forests (etc) because we did the same thing in the past”. Yet there is no ‘we’ in terms of past generations of any country. Different groups therein were often in conflict with each other and indeed within just their own ranks.¹⁷⁴ No nation collectively and democratically decided on policies such as mass

¹⁶⁷ https://en.wikipedia.org/wiki/Foot_binding

¹⁶⁸ Eg <https://www.reuters.com/article/us-india-rape-factbox-idUSKBN1YA0UV>

¹⁶⁹ <https://news.mongabay.com/2017/04/illegal-bushmeat-trade-threatens-human-health-and-great-apes/>

¹⁷⁰ <https://manchesterhistorian.com/2017/genghis-khan-and-the-largest-empire-in-history/>

¹⁷¹ <https://www.independent.co.uk/voices/green-new-deal-alexandria-ocasio-cortez-corbyn-colonialism-climate-change-a8899876.html>

¹⁷² For a sample of this argument, try:

<https://greenworld.org.uk/article/uk-climate-debt-contributions-paying-reparations-loss-and-damage>

¹⁷³ <https://www.greenparty.org.uk/news/2020/07/15/greens-lead-on-first-successful-motion-to-demand-government-reparations-for-slavery/>

¹⁷⁴ Historically, conflict has most often cut through different social strata rather than run straight along ‘class’ lines. More generally, splits within ruling elites were often the key that opened doors to big changes in society.

deforestation. Present generations cannot be held responsible for what their predecessors (or some of them) may have done.¹⁷⁵ In any case, two wrongs do not make a right. On that basis, murderers could justify their crimes on the grounds that ‘other people’ have done it before. Eco-crimes are... eco-crimes.

Tropical deforestation contributes to climatic disruption and other ecological ills. In many cases indigenous forces drove it. In the case of Amazonia, it was the military that actually led the first mass onslaught on Amazonia decades ago.¹⁷⁶ It was partly driven by strategic concerns to establish firm borders, with 1930 often given as key starting day.¹⁷⁷ Western consumers cannot be solely held responsible. The building of Brasilia was also part of an internal drive to ‘occupy’ and exploit inland Brazil. Indeed plans to move the capital into those regions were hatched as early as the late 18th century.¹⁷⁸

Today, President Bolsonaro and, not without much public support, says it is only natural justice that Brazil should exercise its cultural right to do what it wants in Amazonia.¹⁷⁹ The GAGND singularly fails to ‘call out’ ecocidal forces emanating outside the ‘North’.¹⁸⁰ It is a story that repeats itself around all the world.¹⁸¹

In sum, the Earth has many enemies and come from all over the planet and in many guises. Or, to rewrite Franz Fanon, they come with all colour of skin and all sorts of masks... and it has an equal variety of friends.

22. Reparations

The GAGND talks somewhat vaguely of “using international resources to address the inequalities caused or exacerbated by the climate crisis”. More specifically however it advocates “climate reparations”. It seems, then, to be assumed by the GAGND that the ‘rich’ nations should the burden of paying for climate action for reasons beyond straightforward humanitarian aid.

Above, the fallacies of treating nations as single entities that are either rich or poor have been noted. We also see here another instance where an ecological crisis is reduced to just tone of its symptoms, climatic disruption. Here, however we will focus on the notion of “reparations”. It is a thoroughly dodgy one. The GAGND is following those who advocate reparations for past crimes such as the Atlantic slave trade.¹⁸²

Make no mistake. There is indeed a strong case for governments such as the USA and the UK making generous contributions in fields such as forest protection, soil conservation, clean water projects, provision of health care (and family planning facilities), new ‘eco-villages’, and so forth. It is morally right that those with the broadest shoulders should carry the heaviest weight. That obligation should extend to *all* rich countries including the wealthy Gulf states and Saudi Arabia, though the GAGND seems to be thinking only of former colonial powers of

175 The author’s ancestors were ‘Border Reivers’ in the ‘Debateable Lands’ of the Anglo-Scottish border region. In other words, they were thieves and, at times, murderous ones. The author hopes readers will not hold him responsible for their activities nor use them as justification for violent robbery by others in the here and now.

176 <https://theintercept.com/2019/09/20/amazon-brazil-army-bolsonaro/>

177 https://www.amazoniasocioambiental.org/wp-content/uploads/2017/01/Deforestation_in_the_Amazonia1970-2013.pdf

178 <https://www.jstor.org/stable/26473231>

179 <https://www.theguardian.com/world/2019/jul/19/jair-bolsonaro-brazil-amazon-rainforest-deforestation>

180 <https://www.rollingstone.com/politics/politics-features/jair-bolsonaro-rainforest-destruction-1180129/>

181 Eg <https://rainforests.mongabay.com/08transmigration.htm>

<https://www.forbes.com/sites/outofasia/2017/05/03/chinas-huge-dam-projects-will-threaten-southeast-asia-as-water-scarcity-builds-downstream/?sh=445f166f5f6c>

<https://www.theguardian.com/environment/2017/aug/15/bolivia-approves-highway-in-amazon-biodiversity-hotspot-as-big-as-jamaica>

<https://e360.yale.edu/features/turkeys-dam-building-spree-continues-at-steep-ecological-cost>

<https://www.bbc.co.uk/news/world-europe-56341837>

182 Eg <https://www.greenparty.org.uk/news/2020/10/11/green-party-commits-to-reparatory-justice-for-afrikan-enslavement/>

the 'white west'. Moreover, all rich social strata, groups found in *nearly all* countries, should be paying up.¹⁸³

It might be noted here that many groups inside 'poor' countries are waging life and death struggles to protect their part of the Earth... literally so, as can be seen in the death rate amongst local environmentalists across the 'South'.¹⁸⁴ The struggles against deforestation or dams such as the disastrous Narmada project in India¹⁸⁵ have often been battles against indigenous forces such as local state authorities, not just multi-national corporations. At the same time, aid is better directed straight to specific projects to avoid monies sticking to the hands of intermediary politicians and so forth. The GAGND prefers, however, to ignore problems of local corruption,¹⁸⁶ framing the problem solely in terms of 'white-western' culpability.

The exploitation of fossil fuels from the Industrial Revolution in Britain, then the rest of Europe and North America was not some collective decision. Nor was there mass awareness and therefore direct responsibility for its consequences for the world, especially for more vulnerable lands most threatened by rising sea levels and recurrent drought. There was the odd newspaper article before World War One that discussed the climate impact of burning coal¹⁸⁷ and certainly the fossil fuel 'barons' were aware decades ago.¹⁸⁸ But it is a big leap then to demand that the whole population of, say, Britain should be held to account and pay for the damages from past actions for which they personally are not responsible (today is another matter).

Contributions to greenhouse gases from lucrative exploitation of fossil fuels and cattle ranching has not been confined to the 'North'. Before the 1930s Depression, Argentina at the foot of South America was one of the richest economies in the world. Accordingly, its economy made its contribution to GHGs in the atmosphere as did later oil regimes in countries such as Venezuela and Libya. Presumably, they should pay reparations as should Russia's Gazprom and its predecessors in the Communist Era.

There are severe problems in identifying which people today are beneficiaries of past malpractice and the extent to which reparations are owed. For example, my city Newcastle played a largely unknown, albeit not large, part in the slave trade and destructive whaling expeditions. Comparatively few people were directly involved but it might be supposed that some of the fine public buildings in the city may have been funded by profits from such activities. Today's residents of the city benefit from that legacy. Yet there are a countless number of such examples. What should be included and what left out? How far back should one go? Who exactly should pay for up for what form of reparation? These are hard questions!

183 Eg <https://www.forbesafrica.com/billionaires/2021/02/01/africas-richest-2021/>
<https://www.biznews.com/wealth-building/2021/01/06/sa-rich-wealth>
https://en.wikipedia.org/wiki/List_of_Latin_Americans_by_net_worth
<https://www.cnbc.com/2019/03/07/asias-billionaire-population-will-top-1000-within-five-years-report.html>
<https://themedialine.org/news/club-middle-east-the-regions-super-rich-are-on-the-rise/>
<https://qz.com/1919974/china-created-a-record-number-of-billionaires-despite-covid-19/>
<https://economictimes.indiatimes.com/news/economy/indicators/indian-millionaires-count-to-grow-63-over-next-five-years-report/articleshow/81188222.cms?from=mdr>
184 <https://eos.org/articles/murders-of-environmentalists-have-doubled-in-15-years>
185 <https://www.culturalsurvival.org/publications/cultural-survival-quarterly/narmada-issue-overview>
186 <https://www.transparency.org/en/news/citizens-speak-out-about-corruption-in-africa>
<https://www.ganintegrity.com/portal/country-profiles/india/>
https://en.wikipedia.org/wiki/Corruption_in_Brazil
<https://www.irishtimes.com/news/world/two-decades-of-corruption-at-the-highest-level-in-central-america-1.2048965>
<https://news.mongabay.com/2019/05/what-we-learned-from-two-years-of-investigating-corrupt-land-deals-in-indonesia/>
<https://eia-international.org/wp-content/uploads/EIA-report-State-of-Corruption.pdf>
<https://news.mongabay.com/2018/11/the-secret-deal-to-destroy-paradise/>
<https://www.theguardian.com/world/2010/apr/18/hugo-chavez-revolution-corruption-claims>
187 <https://www.businessinsider.com/newspaper-in-1912-linked-coal-to-climate-change-2018-8?r=US&IR=T>
188 <https://www.scientificamerican.com/article/exxon-knew-about-climate-change-almost-40-years-ago/>

For example, the ‘nabobs’ of, say, the East India Company and Dutch VOC really did make fortunes from the exploitation of India and the then East Indies. Figures such as Cecil Rhodes in Africa also illustrate the same pattern. The brutality of imperialism is not in doubt either.¹⁸⁹ But it is hard to be sure who exactly benefited back home and to what extent.

It could even be argued that countries such as the UK actually suffered on balance because of imperial aggrandisement. Investment that could have made at home went abroad while the cost of maintaining the Empire (for the few) fell on the many, with, of course many soldiers paying with their lives. Not surprisingly there was considerable domestic opposition to the imperial project. The fact that many British citizens were too physically puny to serve as soldiers in World War 1 rather underlines the way the ‘fruits’ of the colonial enterprise were very unevenly distributed in the imperial homelands.

23. Common fallacy

The GAGND would appear to endorse another fallacy, namely that the solution to our global ills lies in ‘reclaiming the commons’. It states: “we can ensure that the Earth’s resources belong to all of us”. Let us leave aside the anthropocentric ‘resourcism’ in that statement.¹⁹⁰ There is another critical matter here relating to the immediate drivers of ecological destruction.

The “all of us” statement implies that the problem is essentially the ‘enclosure’ and privatisation of previously common property resources. To be fair, there are plenty of instances of such harmful takeovers, not least by water corporations and other private business seizing control of water supplies or companies in the genetics industry patenting genes from our collective ‘library’. Thus, problems are perceived within a framework of corporate malfeasance (with the state acting solely as the servant of such interests).

Though the GAGND does not explicitly state this, those who push this perspective commonly argue that, by contrast, local communities do not abuse the ‘commons’ (pastures, fisheries, woodland, etc) they exploit for their needs. Three points need to be made here.

First is that such instance are usually found in small-scale, long established communities using low impact technologies. Our world is extremely different, with most people living in settlements with huge populations and in societies armed to the teeth with what one study rightly called “brute-force” technologies.¹⁹¹ They are often transient residents, commuting long distances as well as changing jobs and houses frequently.¹⁹² Sometimes, they do not even know their neighbours. They often have no idea where their food, energy, water and so forth come from or where their wastes go, unlike most dwellers in ‘vernacular cultures’ in the past. Feedback that can encourage sustainable behaviours is far less present (ie lessons in the form of direct and obvious consequences from unsustainable living).

Secondly, some small-scale communities did damage their lands. Thus, there was huge deforestation in ancient Scotland, long before the ‘Clearances’ and the coming of the chainsaw.¹⁹³ There is a third flaw in this model of the commons. Often there were no true

189 Eg <https://daily.jstor.org/the-ugly-origins-of-americas-involvement-in-the-philippines/>
<https://www.ushmm.org/collections/bibliography/herero-and-nama-genocide>
<https://www.bbc.co.uk/news/world-europe-53017188>

There again, few of these atrocities match those of Hitler, Stalin and Mao. In recent years appalling crimes have been committed in China (Tibetans, Uyghurs etc), Burma (Rohingya, Nagas etc), Rwanda, Biafra, East Timor etc

190 <https://meisner.ca/1995/03/30/resourcist-language-the-symbolic-enslavement-of-nature/>
https://www.pdcnet.org/scholarpdf/show?id=environethics_1984_0006_0004_0293_0322&pdfname=environethics_1984_0006_0004_0293_0322.pdf&file_type=pdf
https://books.google.co.uk/books/about/The_Fallacy_of_Wildlife_Conservation.html?id=hk8OAQAAMAAJ&redir_esc=y

<https://global.oup.com/academic/product/the-arrogance-of-humanism-9780195028904?cc=gb&lang=en&>

191 <https://islandpress.org/books/industrialized-nature>

192 The average American moves more than 10 times in their life. It seems less in Europe. Commuting has increased as well, again reducing intimate connections with particular places:

<https://www.visualcapitalist.com/average-commute-u-s-states-cities/>

193 <https://treesforlife.org.uk/into-the-forest/habitats-and-ecology/human-impacts/deforestation/>

'commons' at all. There may not have been private ownership per se but there was certainly restricted access, with clans, tribes and other groups often fighting to exclude other users. In other words, there was a degree of 'enclosure' and no 'open' access, the critical characteristic of a commons (along with finite size).

But there is a bigger matter. Many of today's threats, including some of the most urgent, are happening with 'resources' that already *do* "belong to all". They include the 'open sky' (air pollutants and GHG emissions being dumped into the seemingly large but actually nonetheless finite atmosphere), the commons of the 'high seas' (pollution and overfishing outside 'enclosed' territorial waters), migratory wildlife (direct overexploitation via hunting, sport etc), depletion of water from aquifers and rivers, traffic congestion on the 'open road'. In all the cases and more, we need regulation and *restricted* access with clear jurisdictions.¹⁹⁴

See also:

<https://www.jstor.org/stable/27828993>

https://link.springer.com/chapter/10.1007/978-94-011-4746-0_6

https://www.press.umich.edu/11769002/primitive_polluters

<https://knowledgenuts.com/2014/06/25/native-americans-didnt-always-use-the-whole-bison/>

194 At stake here are two rival perspectives. The first probably has most roots in Marxism. It sees all current structures and processes are but masks for privilege, oppression and exploitation. The 'privilege' angle has been taken over to some extent by 'Identity Politics' (see: <https://www.allenandunwin.com/browse/books/academic-professional/cultural-studies/Cynical-Theories-Helen-Pluckrose-and-James-Lindsay-9781800750067>)

The alternative is best called 'the tyranny of micro-decisions' where motives may also be malign (selfish greed etc) but not necessarily so. Indeed great harm can result from the **cumulative** consequences in a **finite** system of a **myriad of individual decisions**, ones made with a variety of reasons, from ignorance, laziness, fear, personal convenience, desire for comfort right through to thoroughly decent humanitarian motivations (eg reduction of child mortality leading to population growth). Often long-term consequences are not known while immediate benefits are quite tangible. No-one deliberately to cause congestion on the open highway when they choose to use their car but if too many people make the same decision, that outcome is the inevitable result.

This dynamic is often called the tragedy of the commons, not least because the famous essay by Garrett Hardin. But that was only one version and let down by somewhat ahistorical perspectives which leave out the circumstances of why people might have overgrazed common land. [A particularly clear restatement of Hardin is by William Ophuls in his 'Ecology and the Politics of Scarcity' (https://archive.org/stream/pdfy-SXVS7n8VVRQUMvFD/Ecology%20and%20the%20politics%20of%20scarcity%20revisited%20%20the%20unraveling%20o_djvu.txt) See also: http://www.ophuls.org/William_Ophuls/Publications.html]

In fact, the analysis is very old, dating back to ancient Greece and Rome such as Aristotle (as to be fair Hardin recognises). Unlike, it seems, the authors of the GAGND declaration, those original thinkers recognised that something that belongs to everyone in effect belongs to no-one and as a result suffers from neglect or abuse. Thus, people tend to treat a hired car with less care than their own vehicle. The gardens of a multiply occupied property tend to be in a poorer state than those of privately owned property (which is why in some apartment blocks, professional gardeners are part of the site contract).

Perhaps the most visible illustration of the dynamic at work is light pollution and loss of the 'night sky'. It is not caused by the evil '1%' leaving on all the lights for some nefarious reason but by countless decisions to leave on lights at night for many, many reasons, from road safety to 'night life' pleasures (eg mid-evening sports). The cost in terms of energy consumption and therefore other pollution is significant. Council finances are also hit hard.

The most visible example at ground level is perhaps litter which people can freely add to the commons of pavements and paths and other public places (<https://www.city-journal.org/html/trash-studies-14802.html>) . Less visible are the 'fatbergs' blocking the (open access) sewers. They are scarcely caused by the same rich 'Few' taking gigantic dumps and flushing a mountain of wet wipes but by many, many decisions not to dispose of waste responsibly. (<https://www.aquatechtrade.com/news/wastewater/largest-fatbergs-uk/>) It takes large numbers to cause the "Prozac" pollution' of open access rivers (eg <https://www.sciencemag.org/news/2021/02/prozac-turns-guppies-zombies> or erode public (ie open access) footpaths), overwhelm the 'belong-to-all' National Parks (<https://e360.yale.edu/features/greenlock-a-visitor-crush-is-overwhelming-americas-national-parks>) It is mass use of air conditioning that is heating the open skies (https://amp.theguardian.com/environment/2021/jul/25/air-conditioning-climate-crisis-global-heating?fbclid=IwAR2eQ4MQaZ4UYg9xMOAYREcl3cJY3SxLm1_OnRi9-fCdXMGbRRBsJwA2gG4). The peak pressure on grids sometimes comes from just a mass of people switching on kettles at half-time during a televised cup final but expensive extra capacity has to be there to cater for it.

Emergency services call lines are frequently blocked people misusing this open access system but again the culprits are not just the super-elites (<https://www.heart.co.uk/news/quirky/stupid-999-calls-weird-met-police-britain-england/>). Mount Everest, the world's highest mountain, also 'belongs to all' but open access has led to overcrowding, even at those heights, yet another tragedy of the commons since no individual intended that outcome (<https://www.downtoearth.org.in/blog/governance/mt-everest-overcrowding-at-the-top-of-the-world-must-be-regulated-66061>). One might blame greedy tour companies yet they are in business because so many

A model of 'enclosed' vs 'belong to all'/'reclaim the commons' is far too simplistic, even at the level of a short document.

24. System change

Alongside the growth in support for a Green New Deal has been the rise of new waves of protest over the climate emergency, most of all of around the movement Extinction Rebellion. There is some overlap in the widespread feeling that the 'truth' is not being told and that the political way forward is via 'citizens assemblies', through the which the People will speak out for ecological sanity.

The latter demand has been discussed above. All that needs to be said about the call to 'tell the truth' is that any intelligent person perusing the media can quickly tell that things are in a very parlous state (David Attenborough documentaries on TV, etc). Of course, there are newspapers such as the 'Daily Express' that deal in mindless optimism but they are now a minority.

Bodies such as the IPCC have rather pulled their punch in the past but that is not a conspiracy. Rather, it is the workings of an organisation seeking to find a consensus. Of late, the reports have become starkly clear.¹⁹⁵ Other scientists have forcefully spoken out.¹⁹⁶ Even in the field of popular culture, the truth has now been told quite clearly, not least in the new genre of 'cli-fi' where bleak picture of the future abound.¹⁹⁷ Popular cinema too has started to give a sense of just what is at stake.¹⁹⁸

The third XR demand and one implicit in some Green New Circles is the notion of 'system change'. It means absolutely nothing, giving no idea what measures need to be taken and by whom. It gives no guidance about the mechanics or the destination of that change. It is simplistic and reductionist to pose things in terms of 'systems'. Life is more complex than rigid either/or formulations.

'Feudalism', for example, was more complex and varied, changing from one time and place to another. The phrase 'feudal system' obscures as much as it reveals. There are many more dynamics to a society than economic relationships eg religion and regional identity.

Technologies possess intrinsic characteristics, ones independent of ownership. The label 'capitalist' is similarly too simplistic. Some 'capitalist systems' had slavery, others did not. Some have yawning inequities while others are more level. Some are totalitarian, others have some basic freedoms.

people want their services. Even the really vast area of belongs-to-all outer space is being hit by pollution eg <https://eos.org/features/the-coming-surge-of-rocket-emissions> and https://www.esa.int/Safety_Security/Space_Debris/Space_debris_by_the_numbers. Much of it is related to 'everyday use' by or for masses of people such as geo-positioning, telecommunications and weather forecasting. There are plenty of examples of good intentions leading to bad outcomes eg leaded petrol, asbestos, Haber process and CFCs were all widely greeted at the time of their development as breakthroughs that would reduce commonly experienced problems (engine 'knocking' and impaired performance, fire risks, poor crop productivity and costly refrigeration). Unfortunately...

This is a useful summary statement of the whole problem: <https://academic.oup.com/bioscience/article-abstract/32/9/728/337180>

See also:

<https://onlinelibrary.wiley.com/doi/10.1111/j.1467-6435.1966.tb02491.x>

For a parallel approach that goes beyond 'exploitation' theories, try:

https://pdxscholar.library.pdx.edu/cgi/viewcontent.cgi?referer=https://www.google.co.uk/&httpsredir=1&article=1064&context=iss_pub

195 <https://www.bbc.co.uk/news/science-environment-58130705>

196 <https://www.theguardian.com/environment/2021/jan/13/top-scientists-warn-of-ghastly-future-of-mass-extinction-and-climate-disruption-aoe>

<https://www.scientistswarning.org/warnings/>

<https://meansandmatters.bankofthewest.com/article/living/brief-history-of-cli-fi-fiction-thats-hooking-readers-on-climate-action/> and <https://www.theguardian.com/environment/climate-consensus-97-per-cent/2017/oct/18/cli-fi-a-new-way-to-talk-about-climate-change>

198 <https://yaleclimateconnections.org/2020/05/cli-fi-movies-a-guide-for-socially-distanced-viewers/>

So, talk of systems severely lacks nuance and indeed is often an extension of crude 'clockwork' mechanics applied to complex human structures. It is more useful to think in terms of particular structures and processes, eg new regulation, changes to company law, different taxes than to shout about 'smashing the system'.

It might be noted that most 'revolutions', ie radical, fast system change, have totally failed to deliver what their leaders promised. Indeed they usually led to economic chaos, civil war, mass imprisonment and waves of summary executions. Nicolai Bukharin once called them the "overheads of revolution" (he should know since he 'lost' his own head having helped to lead one). Indeed, most 'big bang' changes, even well-meant ones tend to backfire¹⁹⁹: better to go for a mass of small projects, addressing the most urgent challenges first, putting all else on the back burner.



The ranks of the Green New Dealers suffer from some of the stultifying sloganeering that pervades many 'progressive' movements. Often there are valid points therein but it is still a limited and limiting picture of the world and its ills, both their causes and solutions.

¹⁹⁹ <https://oneworld-publications.com/the-blunders-of-our-governments.html>

25. Undermining the Earth

Declarations such as the GAGND are, of course, brief, formed of unavoidably rather vague statements, with much having to be left out, both to get agreement amongst potential allies as well as to be pithy. Yet some hard questions have to be asked about what exact policies are envisaged and what they will require, both in toto and in specific fields. The value of any Green New Deal cannot be really assessed we know far more about what is actually entailed.

Will the 'Deal' lead, for example, to further encroachments on wildlife habitat? Will the overall 'built-up' area increase? How many roads, railway lines, ports, etc, will have to be built? Will it use more steel, concrete, brick and tarmac *in toto*? Will there be more mining for copper, bauxite, iron, rare earths & all the other minerals? How many more rivers will be dammed? Will there be greater use of all plastic (ie not just single use)? How many more computers and 'server farms' will there be and how much more energy will they consume and from what sources? Will the number of telecommunication towers and orbiting satellites increase? Will *overall* global consumer consumption go up. **And**, how is the pressure from overpopulation to be pro-actively addressed? All these questions and more need at least rough and ready answers, if not precise details.

The people behind the GAGND are, of course, a coalition and all such bodies inevitably require a degree of compromise. Nor, of course, can basic statements offer more than a sketch, though details ideally should be deducible from the broad outline. The problems start when concessions lead to something that, on balance, is so vacuous and/or misleading and/or plain wrong that it only fogs up the issues at a time when we need maximum clarity.

The GAGND and indeed all similar packages on offer seem to be firmly fixed on the left-wing side of the old left-right political spectrum. Commonly they talk of 'progress' and 'progressive'. To that extent, they fail to engage with the 'mindset' that is at the heart of today's crisis of crises. We certainly need to do things differently but more fundamentally, we need to think about and value things in ways that break from the dominant paradigm of 'progress', with an 'ecocentric', not anthropocentric, starting point.²⁰⁰

GAGND supporters will claim they are realistic. In fact, they seem to be suffering from what Zehner calls "green illusions".²⁰¹ Realistically, their programme is insufficient to halt, let alone reverse the slide to ecological ruination. Greens used to talk about speaking "truth to power". The GAGND ducks the truth. To be fair some worthwhile measures are proposed. Yet, given the scale of the multiple crises we collectively face, they are still sticking plasters that will not heal festering ills. Greens should take a principled stand of the politics of degrowth to a steady-state economy. It is indeed an extremely hard message to sell but it faces the reality of the planetary predicament. In terms of all the other species with whom we share our finite planet, we need to think big.²⁰² In terms of human society, the primary message is 'think shrink'!²⁰³

200 On 'progress', see:

https://www.pdcnet.org/enviroethics/content/enviroethics_1994_0016_0001_0041_0055

<https://www.newstatesman.com/node/148940>

<https://www.scribd.com/book/399599171/The-Myth-of-Progress-Toward-a-Sustainable-Future>

<https://booksc.eu/book/71000451/0ba8e5> ('Tyranny of Progress' by Robert Gomer)

For some historical context to this all pervasive notion, see:

<https://canongate.co.uk/books/11-a-short-history-of-progress/>

On ecocentrism, see

<https://www.wiley.com/en-gb/Ecological+Ethics%3A+An+Introduction%2C+Updated+for+2018+-p-9780745651255>

<https://www.worldcat.org/title/wild-earth-wild-ideas-for-a-world-out-of-balance/oclc/46872328>

<https://www.shambhala.com/deep-ecology-for-the-twenty-first-century.html>

<https://www.northatlanticbooks.com/shop/the-deep-ecology-movement/>

201 <http://www.greenillusions.org>

202 Eg <https://www.half-earthproject.org>

203 <https://steadystate.org/discover/policies/>

Note

This paper is written for activists in the cause of the sustainable common good so references are given in the form of links to material posted on the Internet. Hopefully, then, relevant evidence and arguments will be quickly accessible and recycled into further development of the really green case. A variety of references have been provided so that it might be more likely that material needed to refute some specific point being made by the 'other side' can be located. The author is all too aware of the situation in which like-minded people often find themselves: using tools that are part of the problem (computers) and with a probably a quite modest long-term place in any future sustainable society. Life is complicated!

<https://www.lulu.com/shop/haydn-washington/positive-steps-to-a-steady-state-economy/paperback/product-23210442.html?page=1&pageSize=4>
<https://www.degrowth.info/en/2017/03/degrowth-politics-and-policies-for-degrowth/>
<https://commonstransition.org/policies-for-a-post-growth-economy/>
<https://www.routledge.com/The-Bioregional-Economy-Land-Liberty-and-the-Pursuit-of-Happiness/Cato/p/book/9780415500821>

A brilliant short summary comes from William Ophuls' 'Sane Polity':

<https://soundcloud.com/michael-dowd-grace-limits/ophuls-sane-polity-1>

On poverty and degrowth, see:

<https://thecorrespondent.com/357/outgrowing-growth-why-quality-of-life-not-gdp-should-be-our-measure-of-success/413218170519-b4d036a5>

The key idea is this. Selective degrowth (ie contraction in several sectors of the total economy) to an overall steady-state economy in which there could be areas of expansion providing they are balanced by further degrowth elsewhere. It is of course impossible to state with any accuracy how many people could live at what level of physical consumption given the various trade-offs potentially involved. Nonetheless it seems not unreasonable to suggest a maximum number of around 3 billion living in modest comfort and freedom, with a rich diversity of flora and fauna eg <http://planet3billion.com/index.html>

Clearly that is much lower than current numbers. Yet there have been several instances where population levels fell and by humane means. The education and empowerment of women was often critical. It is a truly win-win-win option: a win for the planet, a win for other species and a win for women via better health, greater choices in life, better economic prospects and general 'liberation'.

The speed at which significant reduction in the 'ecological footprint' could be achieved by reducing the number of feet is huge. If each mother had on average of 1.8 children, compared to 2.3 currently, and motherhood was delayed by 2 years, we'd be at 7.7 billion. Assuming Ecological Footprint per capita stays at 2020 level (2.47 gha per person), the difference in 2050 would be 49 days in terms of the date of Earth Overshoot Day (<https://www.overshootday.org>)

Clearly we need a range of measures across every aspect of society. Once again, it is not either / or but action at all levels in every field, including some (appropriate) technological innovation.