

Editorial introduction

David Samways – Editor

Welcome to the inaugural issue of *The Journal of Population and Sustainability* (JP&S) with our new publishers, The White Horse Press (WHP). This is an exciting time for the JP&S as, with the extensive expertise and experience of the team at WHP, we look forward to further development of the journal including reaching a larger readership and achieving wider citation indexing.

As I write this editorial, the COP26 talks in Glasgow have recently concluded. The final Glasgow Climate Pact has fallen far short of limiting emissions to remain below the Paris Agreement's ambition of no more than 2° C of warming above pre-industrial levels by mid-century. While some progress has been made, it is estimated that current commitments put the Earth on track for 2.4° of warming by the end of the century (CAT, 2021). Tackling population growth was not mentioned in the Pact as a solution to the climate crisis. This was unsurprising: as my own paper in this issue of the JP&S points out, while population growth is a universally acknowledged in the scientific community as a significant driver of the growth of carbon emissions, it has not been the main driver of the massive growth in emissions in the latter half of the twentieth century. More importantly, due to the very long timescales involved in reducing human numbers, measures tackling population size will yield results too slowly to deal with the immediate crisis (Bradshaw and Brook, 2014). Nonetheless, in the longer run, equitable and ethical measures aimed at slowing population growth now will ease future environmental impacts including the level of greenhouse gas emissions (Bradshaw and Brook, 2014; Bongaarts and O'Neill, 2018).

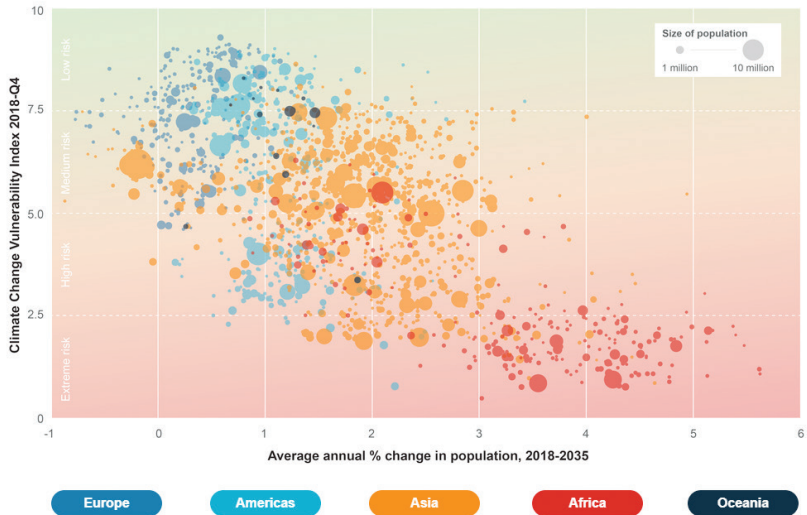
One of the most significant sources of scepticism about the need to address population growth as part of climate change mitigation and adaptation is the observation that a country's fertility rate and its per capita carbon emissions are

generally inversely correlated. Steffen et al. (2015) show that while population growth has been greatest in the Global South, economic growth and consumption – and hence growth in carbon emissions – have been concentrated in the Global North. Indeed, between 1990 and 2015, 52 per cent of cumulative global greenhouse gas emissions were attributable to the wealthiest ten per cent of the global population, while just seven per cent were attributable to the poorest half (Gore, 2020). For many this is sufficient evidence to conclude that population growth is an unimportant distraction from the principle problem of rich world consumption (Monbiot, 2020; Klein, 2014). However, as I argue in the review paper published in this issue, the disjuncture between environmental impact and fertility rates should be understood in terms of the shifting longer-term relationships between economic development, population growth and environmental impact. More importantly, I attempt to show that, in wider questions of environmental sustainability, population size is intrinsically connected with human welfare and wellbeing.

While the cause of the climate crisis is largely attributable to the historically accumulative emissions of the Global North, the poorest regions of the world are particularly vulnerable to the effects of climate change (IPCC, 2014) and will disproportionately suffer adverse effects on health due to extreme heat and growth of disease vectors, increasing water scarcity, soil erosion, crop failure, flooding of low-lying areas, etc.

Importantly, as Figure 1 illustrates, vulnerability to the possible effects of climate change and projected population growth rates are generally positively correlated (Patel, 2018; Price, 2020). There is a broad consensus that high rates of population growth adversely affect development and welfare improvements, and can negatively impact the availability of natural resources (Das Gupta et al., 2011; Beegle and Christianensen, 2019; Price, 2020). The precise relationships between high rates of population growth, low levels of economic development, climate vulnerability, resilience and adaptation are complex and geographically uneven, but, in areas vulnerable to climate change, high rates of population growth have a negative impact on the community's resilience and adaptive capacity (Beegle and Christianensen, 2019; Price, 2020). Moreover existing inequalities of power are often exacerbated, frequently meaning that women are most acutely affected (Kwauk and Braba, 2017; Price, 2020). Poor resilience and adaptive capacity can also lead to social conflict and climate induced migration with associated negative impacts on welfare (Kelley, 2016; Cattaneo et al. 2019).

Figure 1. Climate change vulnerability index. Reproduced with kind permission of Verisk Maplecroft (<https://www.maplecroft.com/risk-indices/climate-change-vulnerability-index/>)



Despite the evidence linking population growth with climate vulnerability, calls from communities in the Global South to address population growth as part of climate resilience and adaptation strategies (e.g. Mcleod et al., 2018), and the potential effectiveness of integrated Population-Health-Environment initiatives (Lopez-Carr and Ervin 2017), discussion of policies designed to tackle population growth remains taboo amongst many environmentalists and those in the field of reproductive health and rights.

In a recent article, Diana Coole (2021) identifies the period between 1974 and 1994 as critical in the genesis of this hostility. Taking a genealogical approach, she argues that prior to the mid-1970s the counter-culture, feminist and early environmental movements associated population policies with economic equality and female emancipation. However, from the mid-1970s to the mid-1990s, population policy per se was recast as racist, misogynist and coercive. Coole argues that the cause for this toxification of population concern lay in broad ideological and geopolitical transformations and shifts in power silencing

some and giving voice to others. In particular she identifies the shift towards an emphasis on identities and rights over collective interests in radical new social movements, the ascendancy of neoliberalism and the progressive reframing of population as a developmental rather than an environmental matter. In the context of geopolitical changes and shifting power dynamics, the outputs of the highly influential UN population conferences of 1974, 1984 and 1994 produced a series of paradigm shifts:

... in 1974 Second and Third World countries rejected American neoMalthusianism; in 1984 an American reversal reflected domestic New Right positions; in 1994 an enhanced role for NGOs endowed the International Women's Movement (IWM) with significant agency. (4)

With the Cairo conference of 1994, the emergent paradigm, frequently known as 'the Cairo consensus', saw a final shift from a concern with the collective environmental risks associated with over-population to a focus on individual rights and aspirations which has dominated the field since. Importantly, the consensus was constructed to reject population policy specifically aimed at achieving broader demographic or environmental objectives. With its emphasis on economic development as the preferred – and supposedly 'natural' – route to fertility reduction, the Cairo consensus, Coole argues, further sedimented the notion that interference in reproductive decisions was unnecessary and that the population question was a 'shameful discourse' (11).

While Coole concedes that criticisms of historical population control discourses were not without substance, and notes that constant vigilance must be paid to the capturing of demographic goals by those pursuing racist agendas, she proposes that there is no fundamental incompatibility between the objectives of securing high-quality reproductive healthcare and addressing population growth to further common environmental interests. Importantly Coole states:

On a globalised planet on the verge of environmental catastrophe, it seems anachronistic and unnecessary to maintain that the reproductive interests of women are antithetical to their interests in genuinely sustainable development. Women, children and the poor are after all among those most vulnerable to advancing environmental devastation

... A demographic-cum-environmental rationale can help mobilise funding commitments for comprehensive family planning services that expand women's rights and opportunities; rational explanations of the connections between mitigating climate change and smaller families could help incentivise responsible reproductive choices... (14–15)

Two of the papers in this issue engage with the reintegration of population into environmental discourses. While recording positive attitudes amongst survey respondents, the authors also note the subject is still unable to entirely shake off the perception that it is a 'shameful discourse'.

Working from the view that synergies may exist between reproductive health and rights and environmental sustainability, Céline Delacroix's paper examines the perceptions of stakeholders in both the reproductive health and rights movement and the environmental sustainability movement regarding links between family planning, population growth and environmental sustainability. Her qualitative research found that both groups overwhelmingly supported the integration of the reproductive health and rights perspective into wider considerations of environmental sustainability. Such 'environmental mainstreaming' of reproductive health and rights not only involves acceptance of the links between population growth and environmental change, but recognition of the role that family planning and the slowing of population growth can play in considerations both of global health and of the resilience and adaptation of vulnerable communities in the Global South to the challenges of environmental change. In particular, the concept of 'planetary health', whereby planetary 'ecological health' is linked to human health, appealed to both stakeholder groups.

However, while Delacroix found high levels support for linking reproductive health and rights to environmental sustainability, a minority rejected the proposition. In particular those in the reproductive health and rights movement were more divided in their support for the 'environmental mainstreaming' of reproductive health and rights. Delacroix identified multiple reasons for this, including questions of global environmental justice, the legacy of colonialism and discrimination and concerns about marginalisation. The first of these are closely related, with respondents seeing population growth in the Global South as a distraction from the responsibilities of the Global North whose wealth is a

result of colonialism and to whom environmental change is largely attributable. Concerns about marginalisation amongst respondents conform most closely to Coole's observations regarding the perception that the population question is taboo, or shameful, or that reproductive health and rights are segregated from, unrelated to and incompatible with environmental sustainability.

Kelley Dennings, Sarah Baillie, Ryan Ricciardi and Adoma Addo's paper, published in this issue, is also concerned with attitudes toward population size and environmental change and draws on the results of an online survey of almost 900 members of the public in the United States. Acknowledging the toxic legacy of the population debate, the authors, who work at the Centre for Biological Diversity (CBD), were specifically interested in understanding public knowledge and perceptions of the relationship between population and environmental degradation. As a campaigning organisation, the CBD were particularly interested in how the survey could be used to inform a 'theory of change' to better tailor their work to increase knowledge, influence attitudes, amplify positive norms and values, and finally enable action and advocacy 'for rights-based solutions to population growth'.

The results of their survey showed that respondents' knowledge of population growth over the last fifty years was poor, with only just over a third of the sample aware of the actual increase in global population, whilst the rest of the respondents believed the figure to be a billion or less. This lack of accurate knowledge contrasted with views about the role of population growth in environmental degradation and the moral responsibility to take action. Over sixty per cent regarded a combination of the growth in population and consumption as responsible for loss of biodiversity and species extinctions, and seventy per cent agreed that, if stabilising population growth would protect the environment then there is a moral duty to do so. Yet, the research also showed that, in terms of personal concern, access to health-care outranked climate change; education came next, followed by inequality, then wildlife extinctions, with concern about immigrant rights pushing population growth into the issue of least concern. Importantly, while Dennings et al. found that two thirds of respondents had no problem talking about population growth with others, the remaining sample showed significant reticence, based upon factors such as their lack of knowledge, lack of interest, or because they perceived the topic to be politically and emotionally sensitive.

Food insecurity is one of the greatest vulnerabilities faced by the world's poorest people. While growth in the production of food has exceeded growth in population, and despite decades of progress in lowering the proportion of the population who are undernourished, the absolute number has recently been rising, currently standing at around 690 million and on track to reach 840 million by 2030. Furthermore, it is estimated that in 2019 close to two billion people did not have access to safe, nutritious and sufficient food. As with other negative impacts of poverty, food insecurity disproportionately affects women (FAO, 2021).

The affordability of food is obviously a critical factor in food security and Stan Becker and David Lam's commentary piece, 'A Wager on Global Food Prices 2001–2020: Who Won and What Does it Mean?' presents the results of their 2011 wager regarding the course of world food prices. The wager echoed that of Paul Ehrlich and Julian Simon in 1980 about the trend in the price of five metals over a ten-year period, in which Ehrlich predicted that due to increasing scarcity that prices would rise. Ehrlich lost the bet as, during the ten-year period agreed upon, the prices had decreased rather than risen. The subject of Becker and Lam's wager was a comparison between UN Food and Agriculture Organization's Food Price Index of 2011–2020 and 2001–2010. Lam contended that, based upon the experience of the last half century, where many health and socio-demographic indicators had shown marked improvement, that neo-Malthusian pessimism was as unwarranted as it was in 1980 and predicted food prices to fall. Becker on the other hand argued that prices were likely to rise due to population growth and environmental factors impacting food supply.

While Becker won the bet, as food prices in the period 2011–2020 were indeed higher than the period 2001–2010, the picture is somewhat more complex. Food production has continued to increase faster than population has grown which should exert downward pressure on food prices. In fact food prices did fall from the time the wager was struck, but they did not decline enough to fall below those of the 2001–2010 period. As Lam comments, food prices vary due to many factors in the short run, including those on the supply side such as crop failure, or on demand side such as rising incomes, transport costs and speculative trading. He points out that these short-term disruptions tend to even out over the longer run, but other factors such as climate change are a cause for concern. Becker shares Lam's concern about climate change, but also draws attention to a range

of environmental and resource constraints which portend potential catastrophe. Importantly, Becker points out that the consumption of meat is growing, meaning that an increasing amount of grain is being diverted to feed animals. Moreover, the growth in meat consumption is also a driver of deforestation.

In our final paper for this issue, Theodore Lianos presents the argument that only the Steady State Economic (SSE) model can act as a basis for policies to avert environmental catastrophe. Examining other approaches such as Green Growth, Ecomodernism and Degrowth, he finds that such approaches do not adequately address all of the factors of the $I=PAT$ equation, where environmental impact (I) is the result of the combination of population size (P), affluence (or consumption) (A) and technology (T) (which in the case of climate change can be understood as the carbon intensity of economic production or GDP). In particular, Lianos argues that the Green Growth and Ecomodernist positions rely on improvements in technology, and the Degrowth position on consumption. In contrast, only the SSE approach addresses all of the factors driving the environmental crisis: per capita consumption, the technical efficiency of production, and importantly, population size.

Lianos briefly traces the origins of the steady state idea from classical antiquity through J.S. Mill, J.M. Keynes and more recent environmental thinkers such as Kenneth Boulding and Herman Daly, going on to expound the steady state model and graphically demonstrate the relationships between biocapacity, welfare and population size. To remain within biophysical boundaries with any given technology, there is a trade-off between welfare (consumption or ecological footprint) and population size. If a society is operating at the boundary of biocapacity – that is, where the collective ecological footprint is equal to biocapacity – neither consumption nor population can grow without technological improvement. He concludes that to simultaneously remain within ecological boundaries and provide a sufficiently high level of welfare, the objective of population reduction rather than stabilisation must be pursued.

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