

Eco-anxiety, climate change and the 'bottom billion': a plea for better understanding

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ABSTRACT

Climate change poses enormous, rapidly increasing risks to human well-being that remain poorly appreciated. The growing understanding of this threat has generated a phenomenon often called 'eco-anxiety'. Eco-anxiety (and its synonyms) is best documented in the Global North, mostly among people who are better educated and whose reasons for concern are both altruistic and self-interested. However, the populations who are most vulnerable to climate change are disproportionately poor and live in the Global South, where evidence for eco-anxiety (or climate) anxiety is limited, especially among those who have been called the 'bottom billion', approximately the global population's poorest decile. Here, I postulate reasons for this research gap as both ethical and practical. Additionally, the bottom billion experience many disadvantages, some of which plausibly lower their recognition of anthropogenic climate change. These disadvantages include nutritional and health factors that can reduce learning capacity, even if access to formal education exists. Many in this population have limited or no electronic access to information. Furthermore, the relationship between the stresses faced by such populations and climate change is often indirect, potentially also disguising recognition of the role of climate change. The world is characterised by many distressing forms of inequality, one of which is the effective 'invisibilisation' of the bottom billion. This group faces many challenges; some of these may exceed climate change as rational causes for anxiety. However, it is here argued that policy makers should act on their behalf, irrespective of evidence that they experience eco-anxiety.

HOW COMMON IS ECO-ANXIETY IN THE GLOBAL SOUTH?

Anthropogenic (human-caused) climate change poses an enormous, rapidly increasing but still underestimated risk to human well-being.¹ Growing understanding of this threat has generated a phenomenon often called 'eco-anxiety'.² This term has synonyms and variants, including climate anxiety and ecological grief.

The literature on these linked topics has grown quickly and is now considerable. However, despite rare assertions to the contrary,^{3–5} very little is known about the prevalence of eco-anxiety in representative populations in the Global South (henceforth the 'South'), particularly among its poorest strata—the group that development economist Paul Collier called 'the bottom billion'.⁶

The most cited study relevant to the scale of climate anxiety in the South is subtitled a 'global

survey'.⁷ This project recruited 15 543 young people (aged 16–25), of whom results were reported for 10,000. Participants were from 10 nations, including four in the South (Brazil, India, Nigeria and the Philippines). Over half of the people who finished this poll reported negative emotions about climate change including fear, anger, sadness, anxiety, powerlessness, helplessness and guilt.

However, although the authors of this study claimed 'good representation within countries', this is hard to reconcile for nations in the South due to the requirement that all surveyed participants needed internet access, and for some, English literacy. Furthermore, data collection in each national population was restricted to the first 1000 respondents (approximately), plausibly increasing bias in the study's findings towards those who were most motivated to respond.

This article has been cited to support the statement that 'climate anxiety occurs mainly in lower-income countries'.⁵ A review of relevant literature about this claim follows.

In 2009, the World Bank surveyed attitudes (not explicitly including anxiety) concerning climate change in over 13 000 people, 74% of whom lived in the South.⁸ Many of the interviews in low-income settings (including India and Kenya) were face to face. The methods for selecting interviewees varied by nation and, in some locations, were stated as nationally representative and random. However, the authors did not disclose the response proportion, nor how interviewees were selected in some countries, including some in the South. The results, therefore, may also be biased towards those who are concerned about climate change, rather than being representative.

In 2013 and 2014, two face-to-face surveys of the perception of and vulnerability to climate change were undertaken. The first was among 101 Nigerian householders living within 300 m of the Atlantic Ocean.⁹ It found that respondents 'generally' perceived that the climate had altered, especially the timing and length of the rainy season. A 'relatively high' non-response was observed. The second survey was conducted among 380 randomly selected 'resource-poor' riverbank erosion-prone households in Bangladesh.¹⁰ This study found that about 90% of interviewees recognised a rise in annual mean temperature and a decrease in annual mean rainfall.

However, as participation in each of these settings was voluntary, again, respondents may be biased towards those who are more concerned. Additionally, the setting in each of these studies is unlikely



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to be nationally representative. Finally, awareness of climate change does not necessarily indicate anxiety about it.

A systematic review of 35 articles explored public perceptions of climate change in literature published between 1980 and 2014.¹¹ It concluded that the literature to that time was too biased towards Western nations (particularly the USA) to draw any conclusion about the global degree of public understanding of climate change.

In 2017, a nationally representative random survey of 5184 adults was conducted by trained ‘enumerators’ in the Philippines, in order to explore knowledge of climate change and disaster preparedness.¹² It found that 60% ‘had not heard of and did not feel well informed’ about climate change. At least two additional surveys have explored climate anxiety in the Philippines. One was of 433 Filipinos who voluntarily participated online, selected via a ‘convenience sampling technique’.¹³ Another study surveyed 452 Filipino adolescents who, at the time, were undergraduate students in a private university.¹⁴ Thus, neither of these later surveys are representative of the wider Filipino population. Another study on eco-anxiety surveyed 1907 women from six South American nations.¹⁵ Of these, 69.6% had a university degree. Thus, this survey also cannot be interpreted as giving insight into the fears of the bottom billion.

POSTULATED OBSTACLES TO THE RECOGNITION OF CLIMATE CHANGE BY THE BOTTOM BILLION

The poorest decile of humanity experiences many interlocking disadvantages, some of which plausibly reduce understanding of the risk of climate change. These disadvantages include nutritional and health factors that can lower learning capacity,¹⁶ even if access to formal education exists.

The relationship between the stresses faced by those who are very poor and climate change may be indirect, helping to mask recognition of causal links. Researchers have suggested that chronic climate change-related events may be harder to conceptualise and recognise than acute disasters.¹⁷ Recent child marriages in Sindh, Pakistan, have been attributed,¹⁸ in part, to poverty worsened by the extreme flooding in Pakistan in 2022, an event which was probably worsened by rising levels of greenhouse gases.¹⁹

LIMITATIONS OF THIS STUDY

Although a few other relevant studies were identified, discussion of them is excluded here due to insufficient space. However, no study was found that researched a representative sample of the bottom billion and it seems unlikely that any such study exists. One reason for this conclusion is that no such study was cited in any paper discussed in this article.

REASONS FOR AND ETHICS CONCERNING THIS APPARENT RESEARCH GAP

The world is characterised by many distressing forms of inequality,²⁰ one of which is the effective ‘invisibilisation’ of the bottom billion. One manifestation of this inequality is that it is extremely difficult to obtain research funding, from either the North or the South, with which to authoritatively explore the views and circumstances of those who are extremely poor. This creates a strong barrier against such investigation.

I also postulate that ethical reasons may also help explain why so little is known about the extent of eco-anxiety among the poorest fraction of the world’s population. In particular, might an investigation of eco-anxiety among the bottom billion cause harm to those surveyed? Such researchers (though in this case

hypothetical) would inevitably inhabit a far more powerful setting than their hypothetical interviewees from the bottom billion. Those in the poorest decile of the world’s people are likely to face many challenges that either exceed climate change as rational causes for anxiety, or which are not conceptualised as climate change related. Could contact between such researchers and this population incite additional anxiety in the studied group? Additional fear might not only concern the reality of climate change and its implications (including by perhaps fostering additional feelings of helplessness among those surveyed), but even the motivation of researchers. Although such ideas are speculative, researchers have a duty of care to not cause harm. Also, even if it was possible to accurately determine the extent of eco-anxiety among the bottom billion would this be of benefit? However, to decline to contemplate such research due to such concerns might also be considered paternalistic.

CONCLUSION

The poorest fraction of the population of the South is disproportionately young, illiterate and electronically disconnected. Each of these factors may inhibit the bottom billion’s recognition of climate change. The vast disparity between wages in the South and North (87–95% lower for work of equal skill)²⁰ has been estimated, but an additionally exploitative relationship is likely to exist between the poorest tier (ie, economically and politically) in the South and those who are more affluent and powerful, even if this latter population is still comparatively poor by global standards and also part of the South. This vulnerability may generate rational reasons for anxiety and grief that over-ride concern over climate change.

Although the literature discussed in this paper concerning eco-anxiety in the South is not exhaustive, I identified no research that convincingly provides evidence of the existence of substantial eco-anxiety among the bottom billion, even though evidence suggests that it may be fairly common among those in the South who are more affluent.⁷ Nonetheless, despite the barriers that have here been postulated as blocking such recognition, it is possible that widespread eco-anxiety occurs among the poorest strata of the South. A representative, sensitively undertaken survey of the bottom billion would be informative, though resource intensive, as it could not rely on either the internet or mobile telephones. The risk that such a study would be unethical is lessened if accompanied by changes in policy that would materially improve the capacity of the bottom billion to reduce their multifactorial poverty and vulnerability.

Irrespective of evidence quantifying the prevalence of eco-anxiety, policy makers in both the North and South should act in the interest of the bottom billion for reasons that are both altruistic and self-interested. A future in which worsening conditions for the bottom billion is considered acceptable by those with the power to influence the trajectory of climate change is likely to worsen conditions for the rest of humanity and could contribute to civilisational collapse.¹

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