

Correspondence

Bitcoin mining is not uneconomic

In my view, Spyros Foteinis's arguments against bitcoin's burgeoning technology on the grounds of its carbon footprint are economically unsound (*Nature* 554, 169; 2018). He compounds the common misperception that cryptocurrency mining is inherently wasteful.

Foteinis estimates that the combined annual electricity consumption due to bitcoin and ethereum mining is 80% that of Greece. But Bitcoin and ethereum last year together generated wealth of US\$275 billion (see go.nature.com/2drhvf). Given that the 11 million inhabitants of Greece generated wealth of almost US\$205 billion in the same year (see go.nature.com/2ha6mqg) and would have consumed much more than just electrical energy in the process, the mining of cryptocurrency seems considerably less wasteful.

The only reform required here is for all nations to move away from fossil-fuel-based electricity generation to nuclear or other sustainable alternatives. The specific association of cryptocurrencies with this unconditional imperative distracts from the real problem.

Stuart Wimbush *Victoria University of Wellington, New Zealand.*
stuart.wimbush@vuw.ac.nz

Inspire lead authors from global south

Dyna Rochmyaningsih argues that the position of authors from the 'global south' on papers with Western scientists could be unfairly affected by their limited access to funding (*Nature* 553, 251; 2018), citing our paper on a new species of orangutan (*Pongo tapanuliensis*) in Indonesia as an example. In that case, however, an Indonesian (A.N.) is one of 4 lead authors, and listing of the 37

co-authors was decided on the basis of contribution rather than funding. Nevertheless, such collaborative standards are rare.

Authorship is too frequently a bargaining point to enable international scientists to work in developing countries or it is politicized, as seems to be happening in Indonesia. National and international scientists from the global south are still less likely to have their papers published (K. A. Wilson *et al.* *PLoS Biol.* 14, e1002413; 2016) and cited (E. Meijaard *et al.* *Conserv. Biol.* 29, 920–925; 2015). These biases need to be addressed.

Access to funding is not the key constraint for aspiring lead authors from the global south (see also *Nature* 554, 415–416; 2018); scientific capacity is. They need more and better instruction on how to lead the conceptualization, implementation, analysis and write-up of the research. As well as participation in international research, this requires training in scientific leadership, publishing culture and in English reading and writing skills. Once they become science leaders, this will rapidly translate into lead authorship.

Anton Nurcahyo *Australian National University, Canberra, Australia.*

Erik Meijaard *University of Queensland, Brisbane, Australia.*
anton.nurcahyo@anu.edu.au

Food safety: risk of glyphosate flagged

As journalists, we have dug into the controversy over the suspected carcinogenicity of the herbicide glyphosate (see B. Url *Nature* 553, 381; 2018). We searched hundreds of internal documents from its manufacturer, Monsanto, released for pending lawsuits (see go.nature.com/2tfpbwy). We feel that our and others' findings (N. Ghisi *et al.* *Chemosphere* 145, 42–54; 2016) justify concern over

the expertise used by the regulatory agencies to evaluate the safety of glyphosate.

From these documents, we formed the impression that Monsanto's in-house toxicologists were concerned about the upcoming evaluation of their flagship product by the International Agency for Research on Cancer, and that they had anticipated the result before the agency classified the product as 'probably carcinogenic to humans' in March 2015. In 1999, the company had commissioned a confidential external expert review of the evidence, which suggested that glyphosate was mutagenic.

In 2016, the European Food Safety Authority declared the evidence on glyphosate's carcinogenicity for humans to be "very limited" (see go.nature.com/2tjuql1), partly on the basis of a large prospective study, the Agricultural Health Study (AHS; see also G. Andreotti *et al.* *J. Natl Cancer Inst.* <http://dx.doi.org/10.1093/jnci/djx233>; 2017). Yet Monsanto's chief epidemiologist wrote in an internal report in 1997 that the AHS protocol rendered estimates of exposure to pesticides inaccurate, potentially masking associations between exposure and disease.

Stéphane Foucart, Stéphane Horel *Le Monde, Paris, France.*
foucart@lemonde.fr

Food safety: change testing regime

I agree with the director of the European Food Safety Agency (EFSA) that the historical mistake of mandating industry to test their own products should not be repeated (B. Url *Nature* 553, 381; 2018). The agency's own record badly shook public trust in 2010, for example, when it overrode

800 or so academic studies on the chemical bisphenol A and its risk to health and the environment — relying instead on the results of four industry-sponsored protocol studies (see go.nature.com/2fi1vcs).

Government-funded academic studies have no vested interest in manipulating data. The best take into account factors such as the cumulative risk of exposure (for example, to dozens of pesticide residues at the same time), do not assume safe levels of carcinogens, test experimentally rather than dismiss low-dose effects of chemicals, and incorporate epidemiology into their evaluations.

On the weedkiller glyphosate, the 'Monsanto papers' (see go.nature.com/2tfpbwy) indicate that the main problem has been the manipulation of data in industry-sponsored studies. In my view, the only role for industry is to contribute to the cost of safety-evaluation studies.

A full reform of EFSA panels would help to restore public trust in the agency's work. For example, a stricter conflict-of-interest policy would promote independence and objectivity, and including more academic scientists would boost scientific insight and raise scientific standards.

Hans Muilerman *Pesticide Action Network, Brussels, Belgium.*

hans@pan-europe.info
*Competing financial interests declared, see go.nature.com/2poqyxv

CONTRIBUTIONS

Correspondence may be sent to correspondence@nature.com after consulting the author guidelines at <http://go.nature.com/cmchno>.