

Dear

International Finance Corporation
International Monetary Fund
UN Food and Agriculture Organisation
European Investment Bank
European Bank of Reconstruction and Development
BNP Paribas
JP Morgan Chase
Bank of America
HSBC
Royal Bank of Canada
Citigroup
Santander
Morgan Stanley
Société Générale
Deutsche Bank
Rabobank
ING Group
Credit Suisse
NatWest
Lloyds
Standard Chartered
World Bank

Post-Covid Economic Recovery: the need to move away from industrial crop and livestock production and to support forms of agriculture that are genuinely sustainable

As the world seeks to ‘build back better’ after COVID-19, it is widely recognised that we need to rethink our relationship with the natural world and to treat it, and the creatures within it, with more respect. This will involve reshaping the way in which we feed ourselves.

We urge intergovernmental organisations to recognise the need to move away from industrial livestock production, including industrial aquaculture. We also urge major financial institutions not to fund or invest in such production. This is essential to minimise the risk of future pandemics. It is also necessary if we are to tackle climate change, biodiversity loss, deforestation, water pollution and antimicrobial resistance.

Industrial livestock production risks further pandemics: Many studies show that with its crowded, stressful conditions industrial livestock production contributes to the emergence, spread and amplification of pathogens, some of which are zoonotic.^{i ii iii} The last global pandemic before COVID-19 emerged from farm animals; this was the 2009 swine flu pandemic.^{iv}

Industrial farming can also have an indirect effect on the emergence of new viruses. Industrial animal agriculture needs huge amounts of soy and cereals to feed the animals. This leads to the expansion of farmland into forests and other wildlife habitats. This closer contact between people and wildlife can lead to pathogen spillover with viruses being transmitted from wild animals to people.^v

Industrial livestock production contributes to antibiotic resistance: Globally, around 70% of all antibiotics are used in farm animals.^{vi} Industrial production depends on the routine use of antibiotics to prevent the diseases that are inevitable when animals are kept in poor conditions. This leads to antibiotic resistance in animals which can then be transferred to people, so undermining the efficacy of antibiotics in human medicine.

The link between industrial livestock production and environmental degradation: Industrial livestock's huge demand for grain as feed has fuelled the intensification of crop production. This, with its monocultures and agro-chemicals, has led to soil degradation,^{vii viii} biodiversity loss, including the loss of pollinators,^{ix x} overuse and pollution of water,^{xi xii xiii} and air pollution.^{xiv xv}

Industrial livestock production undermines food security: 40% of the world's grain is used to feed farm animals^{xvi}; they convert this very inefficiently into meat and milk.^{xvii xviii} If this grain were instead used for direct human consumption an extra four billion people could be fed.^{xix}

Industrial livestock production contributes to climate change: Industrial production has fuelled a huge increase in meat consumption in much of the world. Yet many studies stress that without a big decrease in global meat and dairy consumption it will be very difficult to meet the Paris climate targets.^{xx xxi}

Health problems: The high levels of consumption of red and processed meat that have been made possible by industrial animal agriculture contribute to heart disease, obesity, type 2 diabetes and certain cancers.^{xxii, xxiii, xxiv} The World Economic Forum states that reducing meat consumption would be beneficial both for human health and the environment".

Industrial livestock production undermines small-scale farmers in the developing world: In 2018 the then Director General of the UN Food and Agriculture Organization said: "FAO estimates that more than half of the world's rural poor are livestock farmers and pastoralists ... We need to make sure that smallholders and pastoralists will not be pushed aside by large capital-intensive operations."^{xxv}

Solutions: agriculture that works with nature

We need to move to regenerative forms of agriculture: These can minimise the use of pesticides and artificial fertilisers, while in some cases enhancing productivity, by supporting - and harnessing - natural processes. The Intergovernmental Platform on Biodiversity and Ecosystem Services and the European Commission identify agro-ecology, agro-forestry, organic farming, silvo-pastoral systems and low-intensive permanent grassland as sustainable practices.^{xxvi xxvii} We should restore the link between animals and the land in rotational, integrated crop-livestock farming. Such systems are able to store carbon, restore soils and biodiversity, and reduce the competition between agriculture and forests.^{xxviii}

To minimise disease risk and antibiotics use, we should move to **health-oriented systems for rearing animals** in which good health is integral to the farming method rather than being

propped up by routine use of antibiotics. Health-oriented systems would avoid overcrowding and excessive herd and flock size,^{xxix xxx} minimise stress^{xxxii}, ensure animals can engage in their natural behaviours^{xxxiii}, maintain good air quality^{xxxiii}, and avoid early weaning of pigs^{xxxiv}. Such systems would also respond to our ethical obligation not to harm the farm animals who provide us with food and to ensure that they are able to have a range of positive experiences in their lives.

We urge you to no longer support or fund industrial livestock production in light of the risks outlined above.

Yours sincerely

Jane Goodall
Bill McKibben
Prof Maureen E. Raymo
Prof Richard Templer
Joanna Lumley OBE
Dr David Suzuki
Bishop John Arnold
Prof Joy Carter CBE
Prof Dave Goulson
Prof Raj Patel
Rabbi David Rosen KSG CBE
Hugh Fearnley-Whittingstall
Prof Robert S. Lawrence, MD, MACP
Prof Carl Safina
Sir David Madden
Fazlun Khalid
Prof David Clough
Alan Titchmarsh MBE VMH DL
Prof Barry Popkin
Stanley Johnson
Prof Tim Lang
Ven. Bikkhu Bodhi
Prof John Webster
Bishop Dominic Walker
Tony Wheeler
Michael Morpurgo OBE
Jane Morpurgo MBE
Miriam Margoyles
Stephen Hough CBE
The Reverend Dr John Chryssavgis
Prof Marc Bekoff
Prof Martin Kemp
Dr Rafael Serafin
Revd. Prof Martin Henig
Michael Gottlieb
Prof Michael Reiss
Sr Kathleen Duffy SSJ
Dr Natalie Fee

Prof Randy Malamud
Dr David Nally
Dr Chinny Krishna
Dr Jonathan Balcombe
Lesley Nicol
Prof David Grumett
Dr Eleanor Boyle
Ben Goldsmith
Linda Newberry
Prof Andrew Knight
Prof Ian Duncan
Crispin Ward
Prof Toby Knowles
Carol Royle
Dr Deborah Jones
Rev Prof Andrew Linzey
Prof Marina Lewycka
Arabella Heathcote Amory
Richard Haigh
Chris Mullin
Edward Davey
Gopal Patel
Dr Jeffrey Masson
Peter Egan
Smt Maneka Gandhi
Ros Draper
Prof Christine Nicol
Nithi Nesadurai
Prof James Serpell
Lady Katya Lester
Liz Earle MBE
Dr Richard Ryder
Sue Jameson
James Bolam
Dr Marita Gimenez Candela
Prof Tian Song
Prof Peter Singer
Prof Clive Phillips
Prof Tim Jackson
Dan Zhang
Revd. Prof Elizabeth Stuart
Prof Carola Strassner
Dr Kate Rawles
Prof Richard Read
Prof Culum Brown
Marc Abraham
Michael Pellman Rowland
Noelle Harrison
Prof Bina Agarwal
Andrew Rowan
Amy Wilson

- ⁱ Otte, J., D. Roland-Holst, R. Pfeiffer Soares-Magalhaes, Rushton, J., Graham, J., and Silbergeld, E. 2007. Industrial Livestock Production and Global Health Risks. Food and Agriculture Organization of the United Nations, Pro-Poor Livestock Policy Initiative Research Report.
- ⁱⁱ EMA (European Medicines Agency) and EFSA (European Food Safety Authority), 2017. EMA and EFSA Joint Scientific Opinion on measures to reduce the need to use antimicrobial agents in animal husbandry in the European Union, and the resulting impacts on food safety. *EFSA Journal* 2017;15(1):4666
- ⁱⁱⁱ Council for Agriculture, Science and Technology. Global Risks of Infectious Animal Diseases. *Issue Paper 28*, February 2005; 15pp
- ^{iv} Centres for Disease Control and Prevention <https://www.cdc.gov/flu/pandemic-resources/2009-h1n1-pandemic.html> Accessed 12 April 2020
- ^v Jones B *et al*, 2013. Zoonosis emergence linked to agricultural intensification and environmental change. *PNAS* <https://www.pnas.org/content/110/21/8399>
- ^{vi} Boeckel *et al*, 2019. Global trends in antimicrobial resistance in animals in low- and middle-income countries. *Science* 365, 1266 (2019)
- ^{vii} Edmondson *et al*, 2014. Urban cultivation in allotments maintains soil qualities adversely affected by conventional agriculture. *Journal of Applied Ecology* 2014, 51, 880–889
- ^{viii} Tsiafouli *et al.*, 2015. Intensive agriculture reduces soil biodiversity across Europe. *Global Change Biology*: 21, p973–985
- ^{ix} World Health Organization and Secretariat of the Convention on Biological Diversity. 2015. Connecting global priorities: biodiversity and human health
- ^x [UN Convention to Combat Desertification, 2017. Global Land Outlook](#)
- ^{xi} Mekonnen M and Hoekstra A, 2012. A global assessment of the water footprint of farm animal products. *Ecosystems*.: DOI: 10.1007/s10021-011-9517-8
- ^{xii} World economic and social survey, 2011. United Nations
- ^{xiii} World Bank Group, 2019. Quantity Unknown.
- ^{xiv} Lelieveld *et al*, 2015. The contribution of outdoor air pollution sources to premature mortality on a global scale. *Nature*, Vol 525
- ^{xv} IPBES, 2019. The Global Assessment report on biodiversity and ecosystem services
- ^{xvi} Pradhan *et al*, 2013. Embodied crop calories in animal products. *Environ. Res. Lett.* 8 (2013) 044044
- ^{xvii} Nellesmann *et al*, 2009. The environmental food crisis – The environment’s role in averting future food crises. A UNEP rapid response assessment. United Nations Environment Programme, GRID-Arendal, www.unep.org/pdf/foodcrisis_lores.pdf
- ^{xviii} Lundqvist, J., de Fraiture, C. Molden, D., 2008. Saving Water: From Field to Fork – Curbing Losses and Wastage in the Food Chain. SIWI Policy Brief. http://www.siwi.org/documents/Resources/Policy_Briefs/PB_From_Field_to_Fork_2008.pdf
- ^{xix} Cassidy *et al*, 2013. Redefining agricultural yields: from tonnes to people nourished per hectare. University of Minnesota. *Environ. Res. Lett.* 8 (2013) 034015
- ^{xx} Bajželj, B. *et al.*, 2014. Importance of food-demand management for climate mitigation. *Nature Climate Change* <http://www.nature.com/doifinder/10.1038/nclimate2353>
- ^{xxi} Wellesley *et al*, 2015. Changing climate, changing diets: pathways to lower meat consumption. Royal Institute of International Affairs. www.chathamhouse.org/publication/changing-climate-changing-diets
- ^{xxii} Friel S., Dangour A.D., Garnett T., Lock K., Chalabi Z., Roberts I., Butler A., Butler C.D. Waage J., McMichael A.J. and Haines A., 2009. Health and Climate Change 4: Public health benefits of strategies to reduce greenhouse-gas emissions: food and agriculture. Published online November 25, 2009 DOI:10.1016/S0140-6736(09)61753-0

-
- ^{xxiii} Aston LM, Smith JN and Powles JW, 2012. Impact of a reduced red and processed meat dietary pattern on disease risks and greenhouse gas emissions in the UK: a modelling study. *BMJ Open* Vol 2, Issue 5 <http://bmjopen.bmj.com/content/2/5/e001072.full.pdf+html>
- ^{xxiv} Anand, S. *et al.*, 2015. Food Consumption and its Impact on Cardiovascular Disease: Importance of Solutions Focused on the Globalized Food System. *Journal of the American College of Cardiology*, 66, no 14
- ^{xxv} José Graziano da Silva, 2018. 10th Global Forum for Food and Agriculture: Shaping the Future of Livestock – sustainably, responsibly, efficiently <http://www.fao.org/director-general/my-statements/detail/en/c/1098613/> Accessed 16 March 2018
- ^{xxvi} IPBES, 2019. *Op.Cit.*
- ^{xxvii} European Commission, 2020. EU Biodiversity Strategy for 2030. COM(2020) 380 final
- ^{xxviii} <http://www.fao.org/news/story/en/item/1103556/icode/> Accessed 21 November 2018
- ^{xxix} Otte, *Op Cit*
- ^{xxx} The Review on Antimicrobial Resistance, 2016. Tackling drug-resistant infections globally: final report and recommendations http://amr-review.org/sites/default/files/160518_Final%20paper_with%20cover.pdf
- ^{xxxi} EMA (European Medicines Agency) and EFSA (European Food Safety Authority), 2017. EMA and EFSA Joint Scientific Opinion on measures to reduce the need to use antimicrobial agents in animal husbandry in the European Union, and the resulting impacts on food safety (RONAFA). [EMA/CVMP/570771/2015]. *EFSA Journal* 2017;15(1):4666,
- ^{xxxii} *Ibid*
- ^{xxxiii} European Commission, 2015. Guidelines for the prudent use of antimicrobials in veterinary medicine
- ^{xxxiv} Callaway *et al*, 2006. Social Stress Increases Fecal Shedding of *Salmonella* Typhimurium by Early Weaned Piglets. *Curr. Issues Intestinal Microbiol.* 7: 65–72.