References for *The environmental impact of animal farming* factsheet

1) *At any one time there are 19 billion chickens, 1.5 billion cows,1 billion sheep and 1 billion pigs living on the planet.*

https://www.weforum.org/agenda/2019/02/chart-of-the-day-this-is-how-many-animals-we-eat-each-year/
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World Economic Forum article from 2019.
Source: *The Economist* article from 2014): https://stage.economist.com/graphic-detail/2011/07/27/counting-chickens
(Accessed July 2024)

2) *Worldwide, more than 70 billion land animals are killed every year for food.*

https://www.ciwf.org.uk/media/3640540/ciwf_strategic_plan_20132017.pdf
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https://faunalytics.org/global-animal-slaughter-statistics-and-charts/
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3) *Meat production has doubled in the last 30 years – and this rate of increase shows no sign of slowing*.

https://ourworldindata.org/meat-production
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4) *According to the United Nations, farming animals for food (meat, dairy and eggs) is responsible for 14.5% of all anthropogenic greenhouse gas (GHG) emissions – that is more than is produced by all the land, sea and air transport combined (13%).*

Gerber PJ, Steinfeld H, Henderson B, Mottet A, Opio C, Dijkman J,Falcucci A and Tempio G. , 2013. Tackling climate change through livestock – A global assessment of emissions and mitigation opportunities. Food and Agriculture Organization of the United Nations (FAO), Rome, Italy.
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5) *Studies show that animal farming accounts for around 9% of all CO2 emissions 35–40% of methane emissions and 65% of nitrous oxide emissions.*

McMichael AJ, Powles JW, Butler CD and Uauy R.2007. Food, livestock production, energy, climate change, and health. Lancet. 370 (9594) 1253-1263.
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6) *The clearing of rainforest to create pasture for cattle to graze is responsible for around 80% of Amazon rainforest destruction.*

www.theguardian.com/environment/2009/may/31/supermarkets-amazon-cattle-deforestation-greenpeace
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Nepstad, D.C., Stickler, C.M., Filho, B.S. and Merry, F., 2008. Interactions among Amazon land use, forests and climate: prospects for a near-term forest tipping point. Philosophical transactions of the royal society B: biological sciences, 363(1498), pp.1737-1746. https://doi.org/10.1098/rstb.2007.0036
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7) *In 2020, 42,000 square km of tropical rainforest were lost – that's an area twice the size of the country of Wales, or equivalent to nine football fields disappearing every minute of every day.*

Global Forest Watch. 31.03.2021. Primary Rainforest Destruction Increased 12% from 2019 to 2020.
https://www.globalforestwatch.org/blog/data-and-research/global-tree-cover-loss-data-2020/
(Accessed July 2024)

8) *Humans have already destroyed a third (34%) of the world's tropical rainforests and degraded another 30%. More than half of the destruction since 2002 has been in the Amazon and bordering rainforests.*

Rainforest Foundation Norway. Anders Krogh. 2021. State of the Tropical Rainforest Report
https://www.regnskog.no/en/news/only-a-third-of-the-worlds-rainforests-remains-intact
(Accessed July 2024)

9) *The world's rainforests are home to around 50% of all plant and animal species on Earth.*

Institut de Recherche pour le Développement (IRD). Tropical rainforests original generators of biodiversity. ScienceDaily. ScienceDaily, 31 October 2011.
https://www.sciencedaily.com/releases/2011/10/111028082115.htm
(Accessed July 2024)

10) *One study warns that continued expansion of cattle ranching and agriculture in the Brazilian Amazon could trigger a tipping point by 2050. This would shift the Amazon from tropical rainforest to savanna, with dire consequences for biodiversity and climate regulation.*

https://www.theguardian.com/environment/2024/feb/14/amazon-rainforest-could-reach-tipping-point-by-2050-scientists-warn
(Accessed July 2024)

11) *According to the World Wide Fund for Nature the demand for land for food production is responsible for nearly 60% of global biodiversity loss. The most important factor is the growing of animal feed crops to satisfy our current levels of meat consumption.*

https://www.wwf.org.uk/food
(Accessed July 2024)

World Wildlife Fund for Nature report, Appetite for Destruction, 2017: https://www.wwf.org.uk/sites/default/files/2017-11/WWF_AppetiteForDestruction_Full_Report_Web_0.pdf
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12) *An estimated 300,000 whales, dolphins and porpoises also die in fishing nets every year.*

Read, A.J., Drinker, P. and Northridge, S., 2006. Bycatch of marine mammals in US and global fisheries. Conservation biology, 20(1), pp.163-169. https://doi.org/10.1111/j.1523-1739.2006.00338.x
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13) *One third of fish caught in the world's oceans are converted into fishmeal, which is used as animal feed – often to feed fish on fish farms.*

Alder, J., Campbell, B., Karpouzi, V., Kaschner, K. and Pauly, D., 2008. Forage fish: from ecosystems to markets. Annual review of environment and resources, 33, pp.153-166. https://www.annualreviews.org/doi/abs/10.1146/annurev.environ.33.020807.143204
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14) *On average, it takes three to five pounds (1.36 to 2.27 kg) of fishmeal to produce one pound (0.45 kg) of farm-raised fish*.

Annual Review of Environment and Resources report 2008
www.reuters.com/article/us-fish-food-idUSTRE49S0XH20081029
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15) *Cattle are the most inefficient food converters. They need to eat 20kg of animal feed to produce just a single kg of meat, using up, or in effect 'wasting' 95% of what they are fed.*

Alexander, P., Brown, C., Arneth, A., Finnigan, J. and Rounsevell, M.D., 2016. H15) human appropriation of land for food: The role of diet. Global Environmental Change, 41, pp.88-98. https://doi.org/10.1016/j.gloenvcha.2016.09.005

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Opio, C., Gerber, P., Mottet, A., Falcucci, A., Tempio, G., MacLeod, M., Vellinga, T., Henderson, B. and Steinfeld, H., 2013.
Greenhouse gas emissions from ruminant supply chains–A global life cycle assessment. Food and agriculture organization of the United Nations (FAO). Rome, Italy.
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16) *Today, farmed animals consume over a third (36%) of the world's crop calories,*

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17) *farm animals provide less than a fifth (18%) of our calories.*

Poore, J. and Nemecek, T., 2018. Reducing food's environmental impacts through producers and consumers. Science, 360(6392), pp.987-992. https://josephpoore.com/Science%20360%206392%20987%20-%20Accepted%20Manuscript.pdf
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18) Ibid 17

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Ercin, A.E., Aldaya, M.M. and Hoekstra, A.Y., 2012. The water footprint of soy milk and soy burger and equivalent animal products. Ecological indicators, 18, pp.392-402.
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(Accessed July 2024)

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