

ANNOTATED BIBLIOGRAPHY

For Academic Report on how the economic impact of animal agriculture outweighs its environmental harms.

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Academic Writing

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**Declaration**

By completing this cover sheet and declaration, I confirm that this assignment is my own work, is not copied from the work (published or unpublished) of any other person, and has not previously been submitted for assessment either at Aalto University, or another educational establishment. Any direct or indirect uses of material (e.g.: text, visuals, ideas…) from other sources have been fully acknowledged and cited according to the conventions of the Harvard Referencing System.

1. *Cowspiracy* (2014) [Documentary Film]. Directed by Kip Andersen and Keegan Kuhn. California: A.U.M. Films and Media.

This documentary film investigates the relation between animal agriculture and environmental issues, such as climate change, global warming, water use, deforestation and ocean dead zones, and why the world’s leading environmental organizations refuse to address this. It bases it arguments on interviewing different researchers, authors, medical doctors, environmental non-profit organizations as well as ranchers. Its main premise is that animal agriculture is the leading cause for environmental destruction and that non-governmental organizations are avoiding the topic because they are corrupted.

Instead of just stating the facts, this film has been made to be emotive and the purpose of it is to persuade people. It has also received a lot of criticism. It has been accused of spreading propaganda in order to further an agenda and for exaggerating weak data. However, most of the facts presented have been confirmed by credible sources, for example the United Nations.

1. Gabbatiss, J. (2018) *Meat and dairy companies to surpass oil industry as world’s biggest polluters, report finds.* Available from: <https://www.independent.co.uk/environment/meat-dairy-industry-greenhouse-gas-emissions-fossil-fuels-oil-pollution-iatp-grain-a8451871.html> [Accessed on 12 November 2018].

The author of this article, published on the Independent website, presents a study conducted by the Institute for Agriculture and Trade Policy and GRAIN as well as a paper published in the journal Science, on the topic of meat and dairy industry’s effect on climate change. The first study analysed 35 of the world’s largest meat and dairy companies and came to the conclusion that continuing the current path, the animal production sector could be responsible for 80 percent of the greenhouse gas budget by 2050 and declares that meat and dairy production in those countries must be significantly reduced. The second study presented claimed that its analysis is evidence of the extensive impact of animal agriculture industry, and how much food systems that meet the needs of farmers, consumers as well as the planet are needed.

The article is published in a periodical and written by a journalist, which reduces the credibility of the source. Nevertheless, the studies referenced and discussed in the article were from authoritative sources.

1. Hyner, C. (2015) *A Leading Cause of Everything: One Industry That Is Destroying Our Planet and Our Ability to Thrive on It.* Available from: <http://harvardelr.com/2015/10/26/elrs-a-leading-cause-of-everything-one-industry-that-is-destroying-our-planet-and-our-ability-to-thrive-on-it/> [Accessed on 11 November 2018].

This article published in Harvard Environmental Law Review discusses people’s reliance on animal products, the extensive environmental harms of those and how they are being neglected, by individuals and especially by policy makers. Its main argument is that animal agriculture is a leading cause for many environmental problems, especially climate change, and that it is not taken into consideration enough in the policy discussion. It focuses on the US policies for the issue, and states how United States Department of Agriculture and The Obama Administration’s Climate Action Plan failed to address animal agriculture’s contribution to the problem.

This article was published in a student-run journal, thus it is written by students and has not been peer-reviewed. It also comes out as quite opinionated, but however presents facts from relevant and credible sources.

1. Koneswaran, G. & Nierenberg, D. (2008) ‘Global Farm Animal Production and Global Warming: Impacting and Mitigating Climate Change’ *Environmental Health Perspectives* [Online]. 116 (5): 578–582.

The purpose of this study was to analyse the data on farm animal production’s contribution to climate change. It was conducted by analysing scientific literature on farm animal production, documented greenhouse gas emissions and various mitigation strategies. The study presents numerous facts, numbers and statistics on these topics. It concludes that as meat, egg and dairy production increases, so do emissions, and argues that governments, international organizations, producers and consumers should pay more attention to the role of farm animal production in climate change. The study also declares that changes to be made in these practises and consumption are critical and timely.

This article was published in 2008, so the numbers and statistics in it will have changed by now and can be considered outdated. Also, one of the authors works for an organization against animal cruelty, so there is bias in the study. However, the study has been peer-reviewed which adds to its credibility, and the sources used in it are also legitimate, for example the Food and Agriculture Organization of the United Nations.

1. North American Meat Institute (2015) *The economic impact of the meat industry in the U.S.* Available from: <https://www.meatinstitute.org/index.php?ht=a/GetDocumentAction/i/93337> [Accessed on 10 November 2018].

This study by North American Meat Institute reports that just the meat and poultry industry contributes approximately $894 billion to the U.S economy as well as provides 5.9 million jobs in production, wholesale, retail and suppliers (in 2015). The study is based on data provided by Dun and Bradstreet, the US Department of Agriculture as well as various state agriculture departments.

The source can be considered credible, being the leading non-profit industry trade association for the meat industry in the U.S., although at the same time it is biased in presenting the economic impact of the industry. The study itself is a few years old, so the numbers will have changed by today and the study can be regarded as outdated. However, it still gives an idea of how important and profitable the meat industry is for the U.S economy.

1. Scarborough, P., Appleby, P.N., Mizdrak, A., Briggs, A.D.M., Travis, R.C., Bradbury, K.E. & Key, T.J. (2014) ‘Dietary greenhouse gas emissions of meat-eaters, fish-eaters, vegetarians and vegans in the UK’ *Climatic Change* [Online]. 125 (2): 179-192.

This study published in the journal Climatic Change analyses the differences in dietary greenhouse gas emissions between people who are on a meat including diet, fish including diet, vegetarian diet and vegan diet in the UK. The study included diets of 2,041 vegans, 15,751 vegetarians, 8,123 fish-eaters and 29,589 meat-eaters, aged 20–79 and it was compiled using a food frequency questionnaire. The results were interpreted with greenhouse gas emission parameters for these food commodities. The study estimated the average dietary emissions of each diet group, which were adjusted for sex and age. The results showed that the greenhouse gas emissions in kilograms of carbon dioxide equivalents per day were 7.19 for high meat eaters (category in which most of the adult population in the UK classifies) and 2.89 for vegans, with the rest of the diet groups fluctuating in between.

The study is quite generalized, and the evidence is drawn from a questionnaire, which leaves room for dishonesty and mis-interpretation. In addition, the results of the study apply only in the UK. Also, one of the authors of the study is a member of the Vegan Society, but the others have no bias and work either for the Cancer Epidemiology Unit or the British Heart Foundation Centre of University of Oxford. The study has also been published in a peer-reviewed journal.

1. Steinfeld, H. & Gerber, P. (2010) ‘Livestock production and the global environment: Consume less or produce better?’ *Proceedings of the National Academy of Sciences of the United States of America* [Online]. 107 (43): 18237-18238.

This article addresses the negative environmental impacts of livestock production and analyses the ways in which the production could be made more environmentally friendly, for example by increasing productivity and intensifying production. However, it concludes that with the increasing demand, these actions alone may not be enough. The article also argues that the harmful environmental impact of livestock production has developed in the absence of environmental policies for production and consumption, and states that a dual approach, which targets both production systems and consumption trends, would be the best strategy in order to effectively reduce the environmental impact of livestock.

Both of the authors work for the Food and Agriculture Organization of the United Nations (FAO), adding credibility to the article, which has also been published in a peer-reviewed journal. Also, no conflict of interest can be found. However, the sources used on the article mostly consist of FAO’s own publishes, which makes the range of research a bit narrow. In addition, the article was published in 2010, so the methods and policies in use might be different by now, which can make the article less relevant today.