

GLOBAL Food Security

The Benefits of vegan diets and stock-free farming

Growing plant crops to eat 'first hand' makes much better use of resources than animal farming does. One billion people around the Earth are under-nourished, mostly in the developing world. Meanwhile, the United Nations says that over three billion people could live on the grain fed to farmed animals.¹ This is why more and more people are realising the threat that animal farming poses to global food supplies in a world where the population is projected to grow to 9 billion by 2050.

The farming of animals reduces the food supply for humans because farmed animals use at least half of their food energy for their own life processes (such as movement and metabolism).² Instead of farming animals, we can grow plant crops for humans to eat direct, and this will help to ease the global food crisis.



Global Climate Change

We can cut our greenhouse gas emissions and increase food security if we switch from animal farming to arable farming.

Indirect but significant damage to food security is caused by greenhouse gas emissions from farmed animals. The effects of this are already visible in some of the world's poorest countries, where harmful climate change is hitting the hardest³. Animal farming produces large quantities of the powerful greenhouse gases methane and nitrous oxide. The UN has noted that worldwide:

*"The livestock sector is a major player, responsible for 18 percent of greenhouse gas emissions measured in CO₂ equivalent. This is a higher share than transport."*⁴

Water

Following a vegan diet can relieve pressure on water resources because animal farming has a huge impact on water quality and usage with approximately three times more water needed for the average omnivorous diet than the average vegan diet.⁵

The UN has predicted that:

*"[B]y 2025, 1.8 billion people will be living in countries or regions with absolute water scarcity, and two-thirds of the world population could be under stress conditions"*⁶.

Water shortages are expected to hit South America, sub-Saharan Africa and Asia hardest. These countries are already more vulnerable to the effects of droughts.⁷

Land

A carefully chosen plant-based diet needs less land than a meat-based diet and in the UK a vegan diet can cut the land used to produce food by two-thirds.⁸

A shortage of agricultural land can lead to war, which in turn can cause famine⁹. About 70 percent of the world's agricultural land is currently used for animal farming. One-third of all arable land is used to grow animal feed¹⁰.

Grazing often leads to land degradation. About 70% of all grazing land in dry areas is considered degraded. This is mostly because of overgrazing, compaction and erosion attributable to farmed animals.¹¹ Farmed cattle cause around 80% of all deforestation in the Amazon region.¹²



Traditional vegetable bed, Brazil (2007).
Photo courtesy of Vegfam & Concern Universal



Children with saplings © Ryan Kratzer of African Community Project



Ireland Agriculture Minister and Iain Tolhurst on his stock-free farm.' © tolhurstorganic.co.uk 2009



Stock-free potato field © tolhurstorganic.co.uk 2009

Stock-free Farming - benefits for farmers

- Stock-free farmers (arable farmers who don't use manures or other products from farmed animals) avoid the reliance on the livestock industry to produce manure. They are unaffected by fluctuating costs of animal feed and can function well without subsidies.
- Stock-free farms avoid the worry of animal diseases such as Bird Flu, BSE, bluetongue, Newcastle Disease and foot-and-mouth.
- In the UK stock-free farming offers an alternative to the tight margins and low farmer confidence currently placing many dairy farmers in a precarious situation.¹³
- Green manures, crop rotation and composting are low cost techniques that can be used in the UK and in developing countries and training to grow nutritionally balanced plant diets could be made available.
- In the developing world vegan farming reduces the risk of conflict over scarce water and grazing land and it does not require reliance on domestic animals for food when the survival of the animals can be uncertain, for example in times of drought.

How much plant-based food can we produce?

DEFRA estimates that in terms of calorific requirements, UK agricultural land could produce more than enough food from arable production for the entire population.¹⁴

The area currently being used for crops in the UK is 4.7 million hectares.¹⁵ It is estimated that only 3 million hectares would be required to feed the UK population on a vegan diet,¹⁶ therefore it is very likely that sufficient quantities of suitable land would be available for arable use without having to plough pasture.



Veggie Box © tolhurstorganic.co.uk 2009

A Stock-free Landscape

Many people may find it difficult to envisage a countryside other than the existing, familiar landscape shaped by current farming practices. However, it can be shaped in other ways, for example land which is currently used for grazing could be used for leisure purposes, fruit and nut trees, biomass and for providing woodland habitat for wildlife. Woodland is also a carbon sink, which will help to reduce net carbon emissions. ¹⁷



Green manure crimson red clover
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- [1] United Nations Environment Programme. The environmental food crisis. Nairobi: UNEP; 2009 page 27. http://www.unep.org/publications/search/pub_details_s.asp?ID=40_19 (accessed 14 Sept 2009).
- [2] Food and Agriculture Organization of the United Nations. Livestock's Long Shadow: environmental issues and options. Rome: FAO; 2006 p167. <ftp://ftp.fao.org/docrep/fao/010/a0701e/A0701E.pdf> (accessed 14 Sept 2009).
- [3] FAO. The State of Food Insecurity in the World. Rome, Italy: FAO; 2008, p.2. <ftp://ftp.fao.org/docrep/fao/011/0291e/0291e00.pdf> (accessed 14 Sept 2009).
- [4] Food and Agriculture Organization of the United Nations. Livestock's Long Shadow: environmental issues and options. Rome: FAO; 2006 pxxi. <ftp://ftp.fao.org/docrep/fao/010/a0701e/A0701E.pdf> (accessed 14 Sept 2009).
- [5] D. Renault and W.W. Wallender, Agricultural Water Management, Nutritional Water Productivity and Diets, Volume 45, Number 3, August 2000, pp. 275-296 (22).
- [6] FAO Water Unit. Water scarcity. (accessed 25 June 09) <http://www.fao.org/nr/water/issues/scarcity.html>
- [7] Global Humanitarian Forum. The anatomy of a silent crisis. Geneva: GHF; 2009. p15. http://ghfgenova.org/Portals/0/pdfs/human_impact_report.pdf (accessed 25 June 2009).
- [8] Walsh S. using information from Williams A.G. et al. Determining the environmental burdens and resource use in the production of agricultural and horticultural commodities. Main Report. Defra Research Project IS0205, Bedford: Cranfield University and Defra; 2006. http://randd.defra.gov.uk/Document.aspx?Document=IS0205_3959_FRP.doc (accessed 5 Jun 2009).
- [9] United Nations Environment Programme. Sudan Post-Conflict Environmental Assessment. 2007, p10. http://postconflict.unep.ch/publications/UNEP_Sudan.pdf (accessed 14 Sept 2009).
- [10] Food and Agriculture Organization of the United Nations. Livestock's Long Shadow: environmental issues and options. Rome: FAO; 2006. p48. <ftp://ftp.fao.org/docrep/fao/010/a0701e/A0701E.pdf> (accessed 14 Sept 2009).
- [11] Walsh S. using information from Williams A.G. et al. Determining the environmental burdens and resource use in the production of agricultural and horticultural commodities. Main Report. Defra Research Project IS0205, Bedford: Cranfield University and Defra; 2006. http://randd.defra.gov.uk/Document.aspx?Document=IS0205_3959_FRP.doc (accessed 5 Jun 2009).
- [12] Greenpeace International. Slaughtering the Amazon. Amsterdam: Greenpeace International; 2009. p3. <http://www.greenpeace.org/international/press/reports/slaughtering-the-amazon> (accessed 25 June 2009).
- [13] DairyCo. Factors affecting milk supply. 2009 <http://www.mdcdatum.org.uk/PDF/Factors%20Affecting%20Milk%20Supply.pdf> (accessed 30 June 2009).
- [14] DEFRA Food and Farming Group. Ensuring the UK's food security in a changing world. London: Department for Environment, Food and Rural Affairs; 2008 <http://www.defra.gov.uk/foodfarm/food/pdf/Ensuring-UK-Food-Security-in-a-changing-world-170708.pdf> (accessed 22 Sept 2009).
- [15] DEFRA. Agriculture in the UK 2008. <https://statistics.defra.gov.uk/esg/publications/auk/2008/excel.asp> (accessed 23 July 2009).
- [16] Fairlie S. Can Britain feed itself? The Land Winter 2007-8 <http://transitionculture.org/wp-content/uploads/2007/CanBritain.pdf> (accessed 22 Sept 2009).
- [17] FAO. The state of the world's forests 2009. Rome: FAO, 2009 <http://www.fao.org/docrep/011/i0350e/i0350e00.HTM> (accessed 1 July 2009).
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