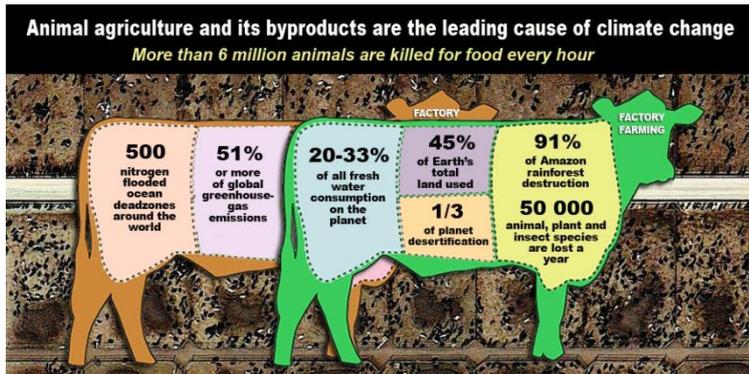


*Animal Voice is the umbrella organisation for Humane Education, and is the official representative of Compassion in World Farming South Africa*

## Understanding the Links between Industrial Animal Agriculture and Climate Change; Options for Policy Makers

Document for discussion produced by Tony Gerrans of the Humane Education Trust and behalf of Compassion in World Farming (South Africa) on 10 October 2015



### Introduction

This briefing paper will argue that modern industrial intensive livestock production methods need to be understood as significant producers of anthropogenic climate change emissions. Any efforts to mitigate such emissions need to address the structure of the current food system. In addition, there are pressing public policy issues of food security, ethics, human health and concerns over habitat destruction and loss of biodiversity, all which require policy intervention and reform.

### The Central Role of Livestock Agriculture in Anthropogenic Emissions

The UN Food & Agriculture Organisation estimates that the livestock sector is responsible for 14.5% of human produced anthropogenic emissions<sup>1</sup>. The volume of emissions is set to rise with increasing intensification of livestock production<sup>2</sup>. Studies show that it is unlikely that global temperature increases can be contained below 2 deg C without changes in global meat and dairy consumption<sup>3</sup>. Increasingly, the negative consequences of industrialised livestock production on food security, economic development, health and social justice are being understood, and resulting in calls for reform of the sector<sup>4</sup>.

### Major trends in modern agriculture

Modern industrialised livestock systems differ materially from traditional farming methods<sup>5</sup>. Production processes are undergoing structural shifts, from rural to peri-urban areas, from extensive grazing to intensive confinement grain-fed operations, from smaller scale privately owned farms to large corporatised operations, as well as a move towards monogastric species (mainly pigs and chickens) in favour over ruminants (cows and sheep)<sup>6</sup>. These processes are often believed to be necessary for global food security. Yet studies show that smallholder farms still produce over 70% of the world's food off only 20% of the world's arable land<sup>7</sup>. Livestock systems produce 33% of the proteins in human diets, but there is a strong and positive relationship between the level of income and the consumption of animal proteins<sup>8</sup> - factory farming is not necessary to feed the worlds poor.

## **Negative Outcomes**

**Increasingly, the negative consequences of intensive livestock operations are being understood, namely:**

- i. When livestock are raised in intensive systems, they convert carbohydrates and protein that might otherwise be eaten directly by humans and use them to produce a smaller quantity of energy and protein. In these situations, livestock can be said to reduce the food balance<sup>9</sup>;
- ii. The food sector accounts for approximately 30% of global energy consumption. There is justifiable concern that the current dependence on fossil fuels may limit the sectors ability to meet global food demands<sup>10</sup>.
- iii. The livestock sector is the largest sectoral source of water pollution, contributing to eutrophication, dead zones in coastal areas, degradation of coral reefs. The sources of pollution are from animal waste, antibiotics and hormones, fertilizers and pesticides from feedcrops and sediments from eroded pastures<sup>11</sup>.
- iv. With over half the world's annual antibiotic production being fed prophylactically to farm animals, antimicrobial resistance (AMR) is an increasingly serious threat to global public health. A post-antibiotic era - in which common infections and minor injuries can kill - is a very real possibility for the 21st century<sup>12</sup>.
- v. The production of soy for animal feed is a key factor driving deforestation in South America, entailing massive biodiversity loss<sup>13</sup>. The livestock sector is the major driver of deforestation, as well as being one of the leading drivers of land degradation, pollution, climate change, overfishing, coastal area sedimentation, wildlife conflicts, and the facilitation of alien species invasions. Some 306 of 825 terrestrial eco-regions reported livestock as a current threat. 23 of 35 Conservation International biodiversity hotspots reported livestock as a current threat<sup>14</sup>. Deforestation is a significant climate change concern.
- vi. The explosion in farm animal numbers, along with the geographical concentration of large scale poultry and pig production, and the transport of animals over long distances, facilitates the emergence of new strains of influenza viruses that can give rise to human pandemics<sup>15</sup>.
- vii. Between 850 million and 1 billion people do not have enough good quality food to eat, i.e. they are mal- or undernourished. Yet, 1.5 billion are classified as overweight, with 30% of these being clinically obese<sup>16</sup>. The failures of the current global food system to ensure adequate nutrition of food security are obvious. There are growing inequalities in the scale of production units in all regions of the world, with increased concentration in larger industrialised production systems. Small family producers are marginalised and disadvantaged. Land ownership is becoming more concentrated with economic and political elites in wealthy countries even buying land for speculative purposes. Excluded groups, who may be the ethnic majority where the land is located, are further excluded from access to land for the production of food that can be consumed locally or regionally. This differentially impacts women farmers, who are the majority of the small agricultural producers worldwide<sup>17</sup>. With a fundamental shift in the functions of livestock, there is a significant danger that the poor are being crowded out and global food security and safety compromised<sup>18</sup>.
- viii. The welfare of animals raised in intensive confinement feeding operations has been recognized as one of the most pressing ethical challenges of our time<sup>19</sup>, and many institutionalized practices are incompatible with modern moral standards. The most egregious forms of cruelty (confinement, mutilation etc.) are progressively being outlawed, with increasingly widespread calls for more sustainable, ethically defensible farming methodologies.

## **Policy Recommendations.**

The UN has identified many of the interventions required, and these are set out extensively in the Interim report of the Special Rapporteur on the right to food, presented to the UN General Assembly on 5 August 2015. These include recognition that:

1. Climate change and food policy are complicated inter-related fields. Hunger and malnutrition are a function of social and economic problems, not production<sup>20</sup>. Food security and adaption to climate change are mutually supportive policy outcomes<sup>21</sup>, and policy makers thus need to consider the issues together.
2. The trend towards intensive industrialised livestock production needs to be arrested and reversed, to reduce the impact of the sector on the environment generally, and on anthropogenic emissions in particular, and to improve food security, economic development, social justice and ethics. There is a need to encourage a major shift from current industrial agriculture to transformative activities such as conservation agriculture (agroecology) that support the local food movement, protect smallholder farmers, empower women, respect food democracy, maintain environmental sustainability and facilitate a healthy diet<sup>22</sup>.
3. The pivotal roles in food production of smallholder farmers, women and indigenous and local communities must be recognized and protected and their acute vulnerability to climate change acknowledged<sup>23</sup>.

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<sup>1</sup> UN Food and Agriculture Organisation, 2013. Tackling climate change through livestock

<sup>2</sup> Bajželj B. Et al, 2014. Importance of food-demand management for climate mitigation, *Nature Climate Change*

<sup>3</sup> Bailey R et al, 2014. *Livestock – Climate Change’s Forgotten Sector*. Chatham House.

<sup>4</sup> See for example the Interim report of the Special Rapporteur on the right to food, UN General Assembly, 5 August 2015

<sup>5</sup> UN Food & Agriculture Organisation, 2006, *Livestock’s Long Shadow, The Livestock Environment and Development Initiative*

<sup>6</sup> Ibid

<sup>7</sup> Celia A. Harvey and others, 2014, Extreme vulnerability of smallholder farmers to agricultural risks and climate change in Madagascar, in *Philosophical Transactions B: Achieving Food and Environmental Security: New Approaches to Close the Gap*, vol. 369, No. 1639

<sup>8</sup> M. Herrero-, D. Grace, J. Njuki, N. Johnson, D. Enahoro, S. Silvestri and M. C. Rufino, *International Livestock Research Institute*, 2012, *The Roles of Livestock in Developing Countries*, Animal

<sup>9</sup> UN Food & Agriculture Organisation, 2013, *The State of Food Insecurity in the World*

<sup>10</sup> UNESCO, 2010, *Energy Smart Food for People & Climate*

<sup>11</sup> UN Food & Agriculture Organisation, 2006, *Livestock’s Long Shadow, The Livestock Environment and Development Initiative*

<sup>12</sup> World Health Organisation, 2014, *Antimicrobial Resistance. Global Report on Surveillance*

<sup>13</sup> UN Food & Agriculture Organisation, 2006, *Livestock’s Long Shadow, The Livestock Environment and Development Initiative*

<sup>14</sup> Ibid

<sup>15</sup> CIWF 2013, *Zoonotic Diseases, Human Health and Farm Animal Welfare*

<sup>16</sup> UN Food & Agriculture Organisation, 2013, *The State of Food Insecurity in the World*

<sup>17</sup> Flora C, 2011, *The Social Structure of Food Production*, Iowa State University

<sup>18</sup> World Bank, 2001

<sup>19</sup> Harari Y, 25 September 2015, *Industrial Farming is One of The Worst Crimes In History*, *The Guardian Online*, [www.theguardian.com](http://www.theguardian.com)

<sup>20</sup> Interim report of the Special Rapporteur on the right to food, UN General Assembly, 5 August 2015

<sup>21</sup> Ibid

<sup>22</sup> Ibid

<sup>23</sup> Ibid