Research Report | XXVI Annual Session

Environment Commission

The question of animal livestock farming

MODEL UNITED NATIONS
THE INTERNATIONAL SCHOOL OF THE HAGUE

Yasmin Liverpool
Maartje Van Lelyveld

Forum: General Assembly 3

Issue: The question of animal livestock farming

Student Officer: Yasmin Liverpool

Position: Deputy President of the Environment Commission

Introduction

Animal livestock farming is one of the most significant contributors to the environmental problems of today. Using up approximately 1/3 of the planet's ice-free land, it contributes more to global warming than transportation (as measured in carbon dioxide equivalent) and is responsible for land and water degradation, for example, desertification, and deforestation. It is crucial that more efficient and sustainable methods are developed, especially because demand for livestock products will continue to increase as incomes and human population grow. This sector growth needs to be managed to ensure that it contributes to livelihoods and long-term food security, and responds to climate change. "Livestock are one of the most significant contributors to today's most serious environmental problems," senior UN Food and Agriculture Organization (FAO) official Henning Steinfeld said. "Urgent action is required to remedy the situation." It is essential that the countries commit themselves to addressing this increasingly pressing issue by coming together to create an international solution. The animal livestock farming requires sustained action to mitigate its negative effects and increase its overall efficiency as an industry.

Definition of Key Terms

Animal livestock farming

The practice of rearing animals to produce food and other commodities.

Global Warming

A gradual increase in the overall temperature of the earth's atmosphere generally attributed to the greenhouse effect caused by increased levels of carbon dioxide, CFCs, and other pollutants. Global warming potential (GWP) is an index that relates the impact of emissions of a gas to that of emission of an equivalent mass of CO2.

Climate change

A change in global or regional climate patterns, in particular a change apparent from the mid to late 20th century onwards and attributed largely to the increased levels of atmospheric carbon dioxide produced by the use of fossil fuels.

Desertification

The process by which fertile land becomes desert, typically as a result of drought, deforestation, or inappropriate agriculture.

Deforestation

The clearing of trees, transforming a forest into cleared land.

Ruminants

Even-toed ungulate mammals that chew the cud regurgitated from its rumen. The ruminants comprise the cattle, sheep, antelopes, deer, giraffes, and their relatives.

Enteric fermentation

A digestive process by which carbohydrates are broken down by microorganisms into simple molecules for absorption into the bloodstream of an animal. It is one of the factors in increased methane emissions.

Antibiotic resistance

The ability of bacteria and other microorganisms to resist the effects of an antibiotic to which they were once sensitive. Antibiotic resistance is a major concern of overuse of antibiotics.

General Overview

Global demand for livestock products is projected to increase by 70% to respond to the demand of a population of 9.6 billion by 2050. With increased prosperity, people are consuming more meat and dairy products every year. Global meat production is predicted to more than double from 229 million tonnes in 1999/2001 to 465 million tonnes in 2050, while milk output is set to climb from 580 to 1043 million tonnes. The implications for the environment are huge. For example, the FAO said that global meat production was responsible for more greenhouse gas emissions than all of the world's cars, trains and planes combined. The main impacts of the growing animal livestock industry are global warming, land and water degradation and the huge drain on resources.

Climate change

Animal livestock farming contributes significantly to global warming. When the emissions from land use and land use change are included, it is estimated that the livestock sector accounts for 9 per cent of carbon dioxide deriving from human-related activities and 37 per cent of all human-induced methane, which has 23 times the Global Warming Potential (GWP) of carbon dioxide. This is largely produced by the digestive system of ruminants. It further produces 65 per cent of human-related nitrous oxide, which has 296 times the GWP of carbon dioxide. Most of this has its source in manure. The primary sources are manure and the production of chemical fertilisers. Livestock are also responsible for almost two-thirds (64 per cent) of ammonia emissions, which contribute significantly to acid rain and acidification of ecosystems.

Land, water and resources

Livestock require a lot of land and resources. Using animals for food and other products and services depends on natural resources, as do many other human activities. Humans are using the world's natural resources at rates that are increasingly exceeding their natural abilities to renew themselves. Humans introduce growing amounts of pollutants into the air, water and soil, at rates ever higher than the capacity of the environment to dissipate or decompose these pollutants.

The water used by the sector exceeds 8 per cent of the global human water use (the major part of this is water used for feed production). The industry also uses 30 per cent of the earth's entire land surface. 33 per cent of global arable land is used to produce feed for livestock. As lands are cleared to create new pastures, animal livestock farming is one of the main causes of deforestation. For example, in Latin America, over 70 per cent of former forests in the Amazon have been cleared for grazing. Deforestation and the conversion of grassland into agricultural land release large quantities of greenhouse gasses into the atmosphere. Cattle-rearing is a major source of land degradation, with approximately 20 per cent of pastures degraded due to overgrazing, compaction and erosion. Herds have also advanced desertification in dry lands.

Animal livestock farming has an enormous impact on water quality, hydrology and aquatic ecosystems. It further contributes greatly to water degradation. The industry is rapidly damaging earth's water resources due to water pollution from animal wastes, fertilizers and pesticides used to spray and feed the crops they consume and other sources.

Anti-biotic resistance

Another issue worth exploring is antibiotic resistance. There is a clear correlation between rising levels of anti-biotic use and antibiotic resistance. In agriculture, high amounts of antibiotics are used to stop the development of infection within a flock or herd, for growth promotion, or to speed up the pace at which animals gain weight. This intensive use drives anti-biotic resistance as bacteria are exposed more often to the antibiotics used to treat them. Many scientific studies have found a link between antibiotic use in animals and resistance in humans.

Major Parties Involved and Their Views

Food and Agriculture Organisation of the United Nations (FAO)

Facilitates the sustainable development of the livestock, which contributes to food security and poverty alleviation, while reducing its environmental footprint and resource use.

Climate and Environment Division

Assists member countries in their responses towards the challenge of climate change, including the mitigation of climate change, as well as the development of adaptive capacities of agriculture

Animal Production and Health Division

Strives to assist Member countries to take full advantage of the contribution the rapidly growing and transforming livestock sector

United Nations Environment Programme (UNEP)

Provides leadership and encourages partnership in caring for the environment by inspiring, informing, and enabling nations and peoples to improve their quality of life without compromising that of future generations

United States of America (USA)

The United States is the largest importer and second largest exporter of meat. Its population has the highest meat intake in the world. They therefore play a huge role in the animal livestock industry, and have a lot of scope and influence in this area. Despite the profit imperative of the meat industry, the USA has a commitment to combatting climate change, which may be reflected in their policies on this issue.

Brazil

Brazil has historically been one of the largest producers of beef. In the past few years, it has been the largest exporter of cattle meat in the world. According to FAO, one in every five pounds of commercialized cattle meat is exported from Brazil. The exported volume achieved 264 822 tons in 2012, and generated USD 1.220,316 million in exports. Brazil has an interest in ensuring that its meat industry remains highly profitable.

Timeline of Events

Date	Description of event
1943	Forty-four governments, meeting in Hot Springs, Virginia, the United States, commit themselves to founding a permanent organization for food and agriculture.
1945	First session of FAO Conference, Quebec City, Canada, establishes FAO as a specialized United Nations agency.
1972	UNEP founded

1992	Adoption of "Agenda 21" by the United Nations Conference on Environment and Development (UNCED) at Earth Summit
2006	UN FAO Report "Livestock's Long Shadow"
2008	FAO holds a high-level conference on 3–5 June on the impact of climate change and the biofuel boom on food security and food prices.
2030	The 2030 Agenda for Sustainable Development (2015)
2015	Resolution 70/223 – Agriculture development, food security and nutrition

UN involvement, Relevant Resolutions, Treaties and Events

There are few resolutions that specifically target the issue detailed in this resolution, which should make resolution writing very exciting for participating delegates. Below are resolutions that address the issue of agriculture and sustainable development generally, and may make some reference to animal livestock farming.

- Agricultural development, food security and nutrition, 22 December 2015 **(A/RES/70/223)tti**
- Agenda 21 by United Nations Conference on Environment and Development (UNCED), Earth Summit 1992
- UN Agenda for Sustainable Development: Goals 12, 13 and 15, 2030
- Antimicrobial resistance, Food and Agriculture Organisation of the United Nations, June 2015 **(RES/4/2015)**

Evaluation of Previous Attempts to Resolve the Issue

As evidenced by the range of summits and commissions dedicated to promoting sustainability, the United Nations is committed to combatting environmental problems, including those caused by animal livestock farming. The UN has yet to produce a resolution that specifically targets the issue of animal livestock farming and its contribution to the environmental problems of our time. The FAO has, however, produced a reliable 2006 report showing the impact of livestock farming on the environment, and engaged in action to find solutions to this issue. The General Assembly has also made some references to the issue.

The General Assembly recognised the need to "increase sustainable agricultural production" and, more specifically, "sustainable livestock management", emphasizing "adaption to climate change as a major concern and objective for all farmers and food producers". Whilst acknowledging the link between animal livestock farming and climate

change in reports, the UN has mainly focused on the adverse effects that climate change will have on food security in its resolutions.

The UN has provided comprehensive reports that assess the environmental impacts of animal livestock farming, namely the 2006 report entitled "Livestock's Long Shadow" by the Food and Agriculture Organisation of the United Nations. This report outlines the key environmental issues associated with the industry and offers solutions. The Livestock Environmental and Assessment Partnership measures and monitors the environmental impact of the livestock sector, relying on FAO's core analytical capacity and related databases.

Beside its efforts to provide reliable assessments of the industry, the Food and Agriculture Organisation has engaged in action with the public and private sector, producers, research and academia, civil society, NGOs, and inter-governmental organizations to establish The Global Agenda of Action in support of Sustainable Livestock Sector Development. The agenda targets three priority areas where improving practices can reduce the negative environmental impact of animal livestock farming: promoting more efficient practices, improved grassland management and better manure management. The Global Agenda for Sustainable Livestock improves the sector's use of natural resources whilst ensuring its contribution to food security and livelihoods. Lastly, the FAO have addressed the issue of antimicrobial resistance in their resolution 4/2015.

Possible Solutions

To combat land degradation and desertification, soil conservation methods can be implemented in conjunction with controlled livestock exclusion from particularly vulnerable and sensitive areas, adapted grazing systems, range improvement and identification of critical grazing periods. Deforestation can be reduced by agricultural intensification and creating incentives for forest conservation and decreased deforestation. Where deforestation occurs, care can be taken to transform the area into a sustainable agricultural area, for example by implementing practices like silvo-pastoral and conservation agriculture, thus preventing irreversible damage.

Limiting the role of livestock in water degradation can be achieved through improving water use efficiency, the efficiency of irrigation systems and boosting water productivity.

The UN Food and Agriculture Organization (FAO) estimates that greenhouse gas emissions from the livestock sector could be cut by as much as 30 per cent. To reduce the impact of the industry on the atmosphere and the climate, the key solution is to increase the efficiency of livestock production and feed crop agriculture through the wider use of existing best practices and technologies, as farming systems that are more productive generally have much lower emissions per unit of product (emissions intensity). This can be done through a variety of methods, such as setting up biogas plant initiatives to recycle manure, and using smarter production methods, including improved animal diets to reduce enteric fermentation, hence methane emissions.

In developing countries, especially in south Asia, Latin America and Africa, there is the greatest potential for cuts in emissions from low-productivity livestock systems. The FAO has promoted microfinance schemes and government subsidies that allow small-scale farmers in these areas to adopt new technologies. However, in developing countries, it must be ensured that sustainability objectives are balanced with development objectives.

To encourage the use of efficient practices and technologies and encourage the development of new solutions, financial incentives are crucial, as practice change may involve risks and require initial investments. This can be supported by regulations and awareness raising. For example, a long-term campaign that raises awareness of the environmental impact of animal livestock farming, and encourages consumers to change their dietary patterns to reduce the consumption of meat could be beneficial. This would also provide health benefits as high-meat diets are linked to heart disease.

Appendix or Appendices

Most relevant UN resolution on agricultural development, food security and nutrition:

http://www.un.org/en/ga/search/view_doc.asp?symbol=A/RES/70/223

Bibliography

"Livestock and the Environment." *Food and Agriculture Organization of the United Nations*. N.p., n.d. Web. 22 June 2016.
http://www.fao.org/livestock-environment/en/

"Livestock's Long Shadow: Environmental Issues and Options." *Livestock's Long Shadow: Environmental Issues and Options*. N.p., n.d. Web. 22 June 2016.
http://www.fao.org/docrep/010/a0701e/a0701e00.HTM

"Growing Greenhouse Gas Emissions Due to Meat Production." *Environmental Development* 5 (2013): 156-63. Web.
http://www.unep.org/pdf/unep-geas_oct_2012.pdf

“Sustainable livestock production is possible.” *University of Cambridge*. N.p., n.d.Web. 25 September 2013.
http://www.cam.ac.uk/research/news/sustainable-livestock-production-is-possible

“Major cuts of greenhouse gas emissions from livestock within reach.” *Food and Agriculture Organisation of the United Nations.* 23 September 2013
http://www.fao.org/news/story/en/item/197608/icode/