

# Research Report

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## General Assembly III Promoting sustainable meat production industries worldwide

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<b>Forum:</b>	General Assembly 3
<b>Issue:</b>	Promoting sustainable meat production industries worldwide
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## Introduction

Meat is a part of everyday meals and is produced by firms worldwide, from Australia to Brazil. Yet, the future of meat is not a bright one. Due to the growing population of earth, the United Nations predicts that by 2050, the world's population will be around 9.3 billion and everyday commodities will be demanded even more than they are today, including meat. The issue is that the current livestock sector is unsustainable and won't be able to supply everyone with meat.

There are two main types of scenarios for the meat industry. In the first scenario, producers of meat are aware of their impacts on the environment, but are driven by large profits and hence do not take these impacts into account. This type of industry is mainly found in More Economically Developed Countries (MEDCs). On the other hand, there are industries that are poorly educated in terms of agriculture or have insufficient space to raise their livestock correctly, which are mostly found in Less Economically Developed Countries (LEDGs). However, these producers also mainly focus on profit and production, which is to an extent understandable since it is a competitive industry. The main process for producing meat globally is factory farming, which was described earlier as mass production and high profits.

What the majority of people don't realize is that it takes resources to produce other resources. In the case of meat production, it is one of the world's largest uses of agricultural land, through grazing and the production of feed crops. In 2011, the United States of America alone produced 26.3 billion pounds of beef, 22.8 billion pounds of pork, 5.8 billion pounds of turkey, 291 million pounds of veal, lamb and mutton and 37.7 billion pounds of chicken. The enormity of this industry naturally leads to impacts on the environment, such as dumping waste and ineffective energy use. Other impacts such as human and animal welfare are also compromised and must also be taken note of. These impacts are topics that need to be



considered as well in promoting sustainable meat production. It is suggested that with the right methodology and agricultural techniques, the meat industry can be sustainable and productive.

The meat industry is also a highly competitive industry, since the price of meat must remain low and be of high quality. Most of the time this is not the case and one of these two aspects is lost along the way. Recently, companies are being audited more regularly due to the multiple issues that have arisen in the industry, for example in the Netherlands, where horse meat was found in packaging that clearly stated beef. The meat industry is an industry with many problems and there is not much being done to solve them. That is why it is very important that member states promote sustainable meat production, as it would improve the current situation.

## Definition of Key Terms

### Sustainable

Defined by Merriam-Webster as “a method of harvesting or using a resource so that the resource is not depleted or permanently damaged.” In the interest of debate and this current issue, it will be defined as a method of producing meat that does not permanently impact the environment and takes into account the welfare of humans and animals.

### Meat

In this issue, meat will be defined as animal flesh that is eaten as food. The animals or livestock in particular are: chickens, sheep, pigs, cattle and any other domesticated animal on a smaller scale, such as rabbits and deer.

### Livestock

Livestock is defined as “domesticated animals raised in an agricultural setting to produce commodities such as feed, fiber and labor.” This term does not discuss poultry or farmed fish, but in the interest of debate, poultry will be included within the meaning of “livestock”.

### Sustainable agriculture

Defined by Australian agricultural scientist Gordon McClymont as “the act of farming using principles of ecology, the study of relationships between organisms and their

environment.” This means that farming is to be done in a way so that the entire system benefits and/or is sustained, e.g. farming using a particular fertilizer which increases plant growth, which sustains the soil and isn't a risk to the animals and humans that consume it.

## Desertification

Desertification is the process where land used for crops and grazing is overused until the soil becomes infertile and useless, much like a desert.

## General Overview

### Current forms of meat production

Different countries and companies have different ways of preparing and producing meat. There are also many different ways to raise livestock. Here are some of the processes:

#### *Extensive*

Extensive meat production entails that livestock is raised on feed that was not altered in any way. Another important aspect to extensive meat production is that the animals have the chance to roam freely outdoors. This “organic” meat is the main rival to the “common” meat, which is produced domestically or intensively, because they are complete opposites. This meat is commonly seen in supermarkets in MEDCs since it is usually considered healthier than regular meat because additives are not injected into the feed or the livestock. This does, however, cause the price of production to be slightly more expensive since the livestock is allowed to grow naturally and needs slightly more nutrients. In certain LEDCs where many advanced agricultural techniques are not in use, extensive meat production remains the most used, especially by nomadic farmers and those wishing to produce the meat purely for their own family's consumption.

#### *Intensive*

This process is the opposite to the previous form of production. When livestock, mainly cattle and poultry, is being raised, their feed and the animals themselves are being enhanced so that they grow faster and/or fatter. This is the most common form of meat production, globally referred to as factory farming. However, factory farming and other types of intensive farming are slowly decreasing in popularity in MEDCs

since there are certain laws against hormonal growth of livestock and there is a developing trend that leans towards natural agricultural methods. The reason to why it is so common is because it is the fastest production method and relatively the cheapest. The fact that it is the cheapest method might seem counter intuitive because it involves injecting extra purchased hormones and special nutrients. However, the hormones save time and increase output per animal. Hence, the benefits outweigh the costs.

Although this method seems economically superior, this method is very bad in terms of health; this is also the leading reason why MEDCs are starting to ban this form of meat production. The hormones that are being used are Oestradiol, Progesterone, Testosterone, Zeranol, Trenbolone, and Melengestrol. According to the European Union's Scientific Committee on Veterinary Measures Relating to Public Health (SCVPH), there is an increase in childbirth complications and for men it can cause lower sperm count.

The conditions inside these factories are extremely poor. Some of the animals die before they are slaughtered because they have been trampled to death or due to organ failure. Not to mention that most of the livestock in these factories are crippled because of the conditions that they live in.

Finally, there is also an environmental impact when using hormones because the manure that the livestock produce actually does not have the same qualities as regular manure to fertilize the soil. The hormones contaminate the ground and water near it, which is a huge problem environmentally. The gases that these farms produce are also very harmful to the environment and contribute massively to global warming.

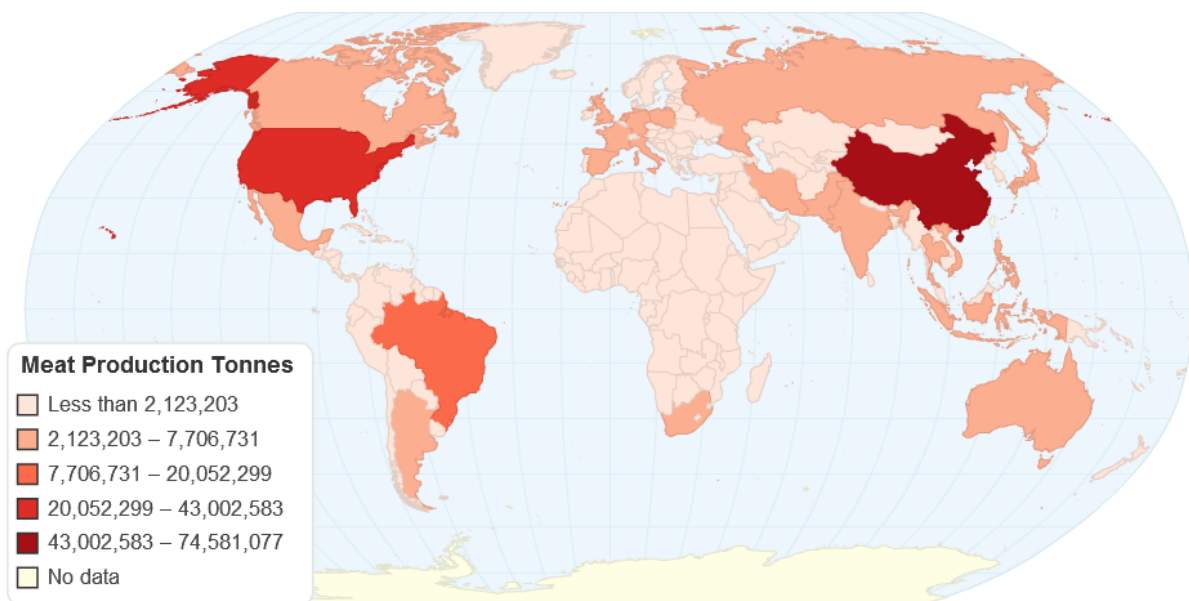
### **Domestic**

Domestic meat production is an interesting case, as it is defined as meat that is produced not for immense profits, but to feed smaller communities or even just families. Domestic meat in an MEDC can be produced in a number of ways, but what this implies is that the producer is located in the country that the meat is distributed to and that they can use both extensive and intensive ways of farming. Domestic farming is also used frequently in LEDCs, especially in poorer areas where most of the population is looking out for their own survival.

## Commercial

Commercial meat production can be defined as the large-scale production of meat that is intended for global distribution. Factory farming is based around this concept; mass-produce as much meat as possible, and sell it commercially for the most profit. Although commercial meat production is not necessarily bad, the way it is executed by most corporations violates environmental, human and animal rights. Commercial meat production needs to be re-invented so it can continue to deliver meat whilst being sustainable.

## The producers of meat



### The world's meat producers and the quantity of meat they produce

"Meat Production in Tonnes per Country." *ChartsBin*. N.p., n.d. Web. 11 Aug. 2014. <<http://chartsbin.com/view/5533>>.

From the map above we can conclude that the top 3 meat producers are China, USA and Brazil, respectively. Sadly, the ways in which the countries produce the meat is not made clear, but it is safe to assume that most of it is produced through factory farming. Nonetheless, organic farming is increasing due to the negative consequences of factory farming.

## Sustainable meat production

Sustainable meat production can be achieved through a multitude of alterations to the production. The following examples are ways in which sustainability could be achieved.

## Greenhouse Gases

The meat production industry is actually one of the largest contributors to global warming to date. This is due to intensive meat production or factory farming which “accounts for 37 percent of methane (CH<sub>4</sub>) emissions. Methane has more than 20 times the global warming potential of CO<sub>2</sub>.” Intensive farming is not completely to blame because the production of crops and deforestation (crops and land is essential for meat production no matter what form of production is taking place) use fossil fuel at the moment which emits more pollution and greenhouse gasses into the atmosphere. It seems that the meat production will always emit some gases, but the rate at which these gases are currently produced makes for an unsustainable meat industry.

## Waste Management

Large farms produce hundreds of tons of waste or manure, and many of these companies are not very careful with how they manage it. The first negative environmental impact is the process used to deposit of the waste. The waste produced by the livestock is usually deposited in nearby bodies of water which are prone to leakages and could result in an environmental disaster, causing the domestic ecology chains to break down and might even effect the overall water supply of the region.

The farms can also utilize waste as compost: the compiling of solidification of the waste. This compost is excellent for fertilizing soil and it makes crop growth easier and yields higher. However, the use of artificial fertilizer is also a real possibility since they are used to regrow the grass or feed faster, which circles back to the problems with intensive farming.

Overall, waste could be managed well to make the meat production sustainable. The challenge is to overcome the fact that these producers are looking for speed, which tends to be a problem when using organic fertilizers.

## Land usage

Desertification is a process which is ultimately the cause of poor land management. At the moment, producers are reshaping the landscape to fit the needs of their businesses since “according to the Economic Research Service of USDA, approximately 85% of all land [in the USA] is not suitable for agricultural crops.” This is to increase the area of their farms. However, if grazing animals are moved on to

that land, meat producers can enlarge their farming land to produce feed. Another land management technique which proves to be useful to producers in LEDCs is crop rotation or, in the case of cattle, grazing rotation. This way, the land will not be exhausted and sustained for future use.

There are some flaws in focusing on sustainable land usage because if we were to fully utilize the land and operate using the reasoning mentioned earlier then there would not be enough land to grow crops on and feed the population and the animals, which is a major problem. Another flaw is the energy efficiency of producing meat in general; this is based around the concept that energy is used to produce the crops for feed for the animals and then the energy to produce the meat to ultimately feed people. This is inefficient when compared to vegetables and fruits, which are grown and then feed the people. This means a whole stage less of energy usage and land usage.

The pros and cons of land usage make sustainable meat production a debate on whether or not it is achievable and if it is efficient to do so.

#### Antibiotic and hormone usage

This was touched upon in the intensive meat production earlier. To recapitalize, the use of hormones allows the livestock to grow larger in a shorter amount of time. This is not good for the welfare of the livestock, but there are also consequences for the consumers of meat with hormones that are so severe that it lowers chances of reproduction. Antibiotics are used so the livestock do not become ill or contract any diseases. This issue is similar to the hormone usage in terms of human welfare, only it can potentially be much more harmful. Because it is almost impossible to only provide the sick and injured animals with antibiotics in a massive herd, all animals are given antibiotics in their feed. This causes antibiotics to be present in meat, which is consumed by people. Although this does not seem like an issue at first, overexposure to antibiotics can actually make bacteria immune to them. This is a huge issue at the moment, since it is only a matter of time before an antibiotic-resistant disease will come about that we won't be able to cure. That is, unless the usage of antibiotics in the meat industry is severely restricted.





## Major Parties Involved and Their Views

### Food and Agriculture Organization (FAO)

The Food and Agriculture Organization (FAO) is one of the leading organizations on this particular topic. Since their main focus is supplying food for the ever-growing demand of the human population, they have also studied ways to make the entire food industry more efficient and sustainable.

They have set up two policies: “*The Global Agenda for Sustainable Livestock*, which aims to catalyze multi-stakeholder action to improve the sector’s use of natural resources whilst ensuring its contribution to food security and livelihoods and *The Livestock Environmental and Assessment Partnership*, which focuses on the development of broadly recognized sector specific guidelines (metrics and methods) for measuring and monitoring the environmental impact of the livestock sector.” These policies involve all sectors of the industry, even the private sector, to help achieve sustainable agriculture.

The FAO does not produce any meat and only conducts research and promotes sustainable meat production globally. Through collaboration with other organizations they can have a big influence on developments within the livestock sector.

### United States of America

The USA is the second large producer of meat in the world and has its own governmental department that regulates the agricultural sector: the US Department of Agriculture (USDA). The USA has many different ways of producing their meat. However, due to the recent change in policy, the USDA has “issued uniform feed-ingredient definitions and feed-labeling standards to ensure feed is safe” and tried to stop the use of hormones to increase production. This policy directly promotes sustainable meat production, not to mention that the USDA regulates factory farming. However, only fines are given to the corporations that are in violation of the regulations. The USDA does have a large influence on the global market and the regulatory bodies within the USA, mainly to promote sustainable production.

### UNEP

The UN Environments Program is another NGO that is responsible for the environmental side of promoting sustainable meat production. Just like the FAO, they do not produce meat, but they have publications for businesses to convert to sustainable processes so that their farms are more efficient and sustainable.



Every year the UNEP hold an eco-innovation convention in which businesses come together to discuss new innovative ways to improve production plants in terms of the environment. The UNEP also works with a large range of NGOs to promote their publications globally.

## India

India is the 8<sup>th</sup> largest producer of meat, and according to the FAO, India is responsible for 4.9 million tones of meat production per year. Nevertheless, this country struggles with environmental regulations and health codes of conduct. Furthermore, they do not set the same sanitation standards as, for example, the USA. Even though India does have large slaughtering houses in the private sector that comply to global sanitary measures, there are many unregistered slaughtering houses which sell their meat locally, which have not been regulated at all and could potentially cause huge health consequences.

The issue with this is that although domestic meat is very affordable for the people in the area, there are huge health and environmental risks involved. These unregistered slaughtering houses cannot compete with the larger supermarkets since they cannot afford the equipment for sanitation, which could have a very harsh economic effect on the poorer communities because jobs are lost and the higher prices will make necessities even more expensive.

Hence, the meat sector is developing very slowly in terms of sustainability. India has mixed emotions over promoting the more expensive sustainable meat production, since almost 30% of the population is under the national poverty line.

## Timeline of Events

Date	Description of event
2007	UNEP publishes policies on how to consume and produce responsibly;
22 December, 2008	The General Assembly adopts a resolution on Agricultural development and food security (A/RES/63/235);
January 18th, 2011	Summit of the World Regions on Food Security;
2nd February, 2012	9 billion people question;
November 12 & 13, 2013	15th UNEP Forum on Eco-Innovation in Hanoi;
5-7 November, 2014	6th International Sustainable Food Planning Conference;



## UN involvement, Relevant Resolutions, Treaties and Events

- Agricultural development and food security, 22<sup>nd</sup> December 2008, **(A/RES/63/235)**

The General Assembly adopted the above resolution on 'Agricultural development and food security'. Although this does not tackle the situation directly, there are mentions of producing meat sustainably in the resolution. The same could be said for the conferences and summits held on the topic of food security, detailed in the 'Timeline of Events'. What is quite substantial is the UNEP publishing a guide on how to consume and produce meat. However, this is an optional guide that merely informs producers and consumers on the meat production process. Sadly, this is approximately the scope of UN involvement on the topic of sustainable meat production.

## Evaluation of Previous Attempts to Resolve the Issue

This topic so far has not been discussed nor debated specifically in a commission within the UN. However, there are several organizations and member states that have made some clear statements on how to promote sustainable meat production, and there have been several improvements made to the situation with UN aid.

The UNEP has released a document that states the consequences of unsustainable meat production and gives suggestions on how the industry could change to reverse these negative consequences. This initiative is a good start in raising awareness for the problem in the meat industry. Conversely, it does not cover any action in promoting sustainability.

The USA has started banning certain hormones, which directly forces the American producers to become more sustainable. Due to the positive media for organic and sustainable meat, the demand for these types of meat is increasing, also promoting sustainable meat production.

Overall, all previous attempts to resolve the issue have been far too small-scaled to really promote sustainable meat production, and there has been very little focus on LEDCs and those producers that do not have sanitation regulation and environmental regulations. There needs to be a holistic approach to solve this issue, one that involves both LEDCs and MEDCs.



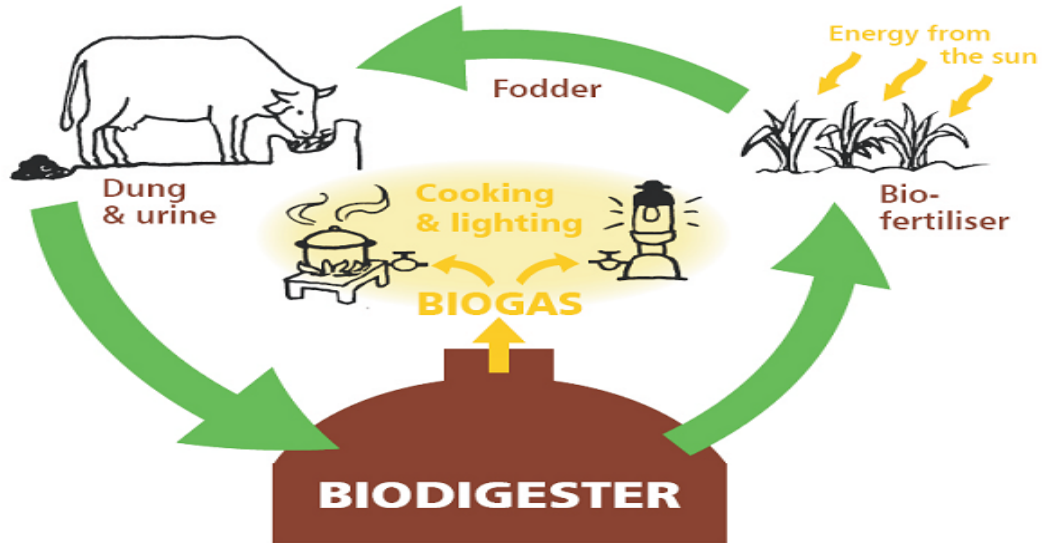
## Possible Solutions

The interesting thing about a topic that has not been discussed is that there are many ways of improving the situation, since not much has been done. The simplest, yet very crucial solution is to advertise health and environmental impacts of unsustainable meat production, the document published by the UNEP would be very useful. This will push consumers to buy organic or natural meat, which are usually more sustainable than others. It might also inform unregistered slaughterhouses in LEDCs about the risks of ill-sanitized meat.

The next clear problem is that there are too few regulations in the meat industry globally. Though some nations have departments of agriculture, it would be easier and more transparent if one holistic set of regulations that would work with member states on how to become more sustainable. The regulations could be discussed at a summit or conference and FAO and UNEP should be included since they have been the leading NGOs on the subject of sustainable production of meat. To go in depth on the regulation they should regulate the problem with greenhouse gasses, waste management and the dilemma with land usage. Furthermore, large companies that break regulations are not punished hard enough when they violate health and environment laws. Currently, a fine and destruction of some of the product is the penalty, but this won't deter an international corporation from repeating the violation. A blacklist wouldn't be sufficient, but a watch list might be. The FAO should also set up its own label of meat that they say fits the sustainable criteria so that consumers know what they are supporting.

The most important solution is to educate and implement the earlier mentioned sustainable production methods. Member states should give incentives to farms and companies that use multiple ways to make their company more sustainable. Educating farmers in LEDCs will greatly improve the current situation and will be beneficial for the future. Such as waste management explained in the diagram below, the waste is deposited in a biodigester releasing gases which can be used for household appliances. Besides, the product from the biodigester is fertilizer, so this process is very beneficial in every aspect.





Solutions for this particular issue are numerous, but the following are the ones that absolutely need to be addressed: raising awareness about the negative consequences of unsustainable meat production, transparency, regulation and implementation. The struggle with this issue will be when trying to find a solution that includes both MEDCs and LEDCs.

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