The Dublin Declaration of Scientists - origins and key messages

Frédéric Leroy

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Research Group of Industrial Microbiology and Food Biotechnology

Belgian Association for Meat Science Technology - President

Origins: the “Dublin Summit”

The SOCIETAL ROLE of MEAT

What the SCIENCE says

The production and consumption of meats from livestock is of foundational importance in all societies

Programme | Contact

Meat and livestock contribute to personal health and well-being, maintain ecological balances and secure socioeconomic livelihoods. The International Summit on The Societal Role of Meat – What the SCIENCE Says, highlighted and summarised all the different ways in which meat is relevant in modern society. The Summit took place in Dublin, Ireland on October 19th & 20th 2022, and was hosted by Teagasc, the Irish Agriculture and Food Development Authority.

Organising Committee:

Peer Ederer, Founder, GOALSciences, Switzerland
Collette Kaster, CEO, American Meat Science Association, USA
Mohammad Koohmaraie, President, Meat Division, IEH Laboratories and Consulting Group, USA
Frédéric Leroy, Professor, Vrije Universiteit Brussel, Belgium
Rod Polkinghorne, CEO, Birkenwood International, Australia
Declan Troy, Assistant Director of Research, Teagasc, Ireland (Host)
Paul Wood, Monash University, Australia

Day 1

Ministerial Address - *Minister Martin Heydon, Minister of State at the Department of Agriculture, Food and the Marine*

The Role of Meat in Diet and Health - *Moderator: Diana Rodgers, Sustainable Dish, USA*

- The Evolutionary Role of Meat and its Implications for Contemporary Nutrition and Health Challenges (PDF) - Neil Mann, **University of Melbourne, Australia**
- The Role of Meat in Global Nutrient Supply (PDF) - Nick Smith, **Massey University, New Zealand**
- How much red meat is good for us? (PDF) - Alice Stanton, **Royal College of Surgeons, Ireland**
- Evidence-Based Nutrition: Decision-making for Individuals and Populations (PDF) - Bradley Johnston, **Texas A&M University, USA**
- Power workshops and discussion

The Role of Meat in a Sustainable Environment - *Moderator: Peter Ballerstedt, Grass Based Health*

- Ecological aspects of livestock agriculture (PDF) - Pablo Manzano, **BC3 Basque Centre for Climate Change, Spain & University of Helsinki, Finland**
- Ruminants - contribution to a sustainable grassland environment, it is not as it seems (PDF) - Jason Rowntree, Michigan **State University, USA**
- The role of grasslands and nutrient circularity in animal agriculture (PDF) - Wilhelm Windisch, **Technical University Munich, Germany**
- Making smallholder farmers ecologically and economically viable- what modern technology and local ingenuity can achieve (PDF) - Max Makuvise, **E-Livestock Global, Zimbabwe**
- Low-carbon agriculture in Brazil: Technologies and Sustainability (PDF) - Celso Moretti, **Embrapa**
- Power workshops and discussion

Day 2

The Role of Meat in Society, Economics and Culture - *Moderator: Theo de Jager, Former President WFO*

- Sustainable livestock opportunities and new food system realities (PDF) - Shirley Tarawali, **International Livestock Research Institute, Kenya**
- The economic value of meat production and society (PDF) - Peer Ederer, **GOALSciences, Switzerland**
- Ethical Considerations of Meat Consumption (presentation available upon request to the author) - Candace Croney, **Purdue University, USA**
- Precision fermentation and cell based meat; viable alternatives? (PDF) -Paul Wood, **Monash University, Australia**
- Power workshops and discussion

Conclusions & Actions

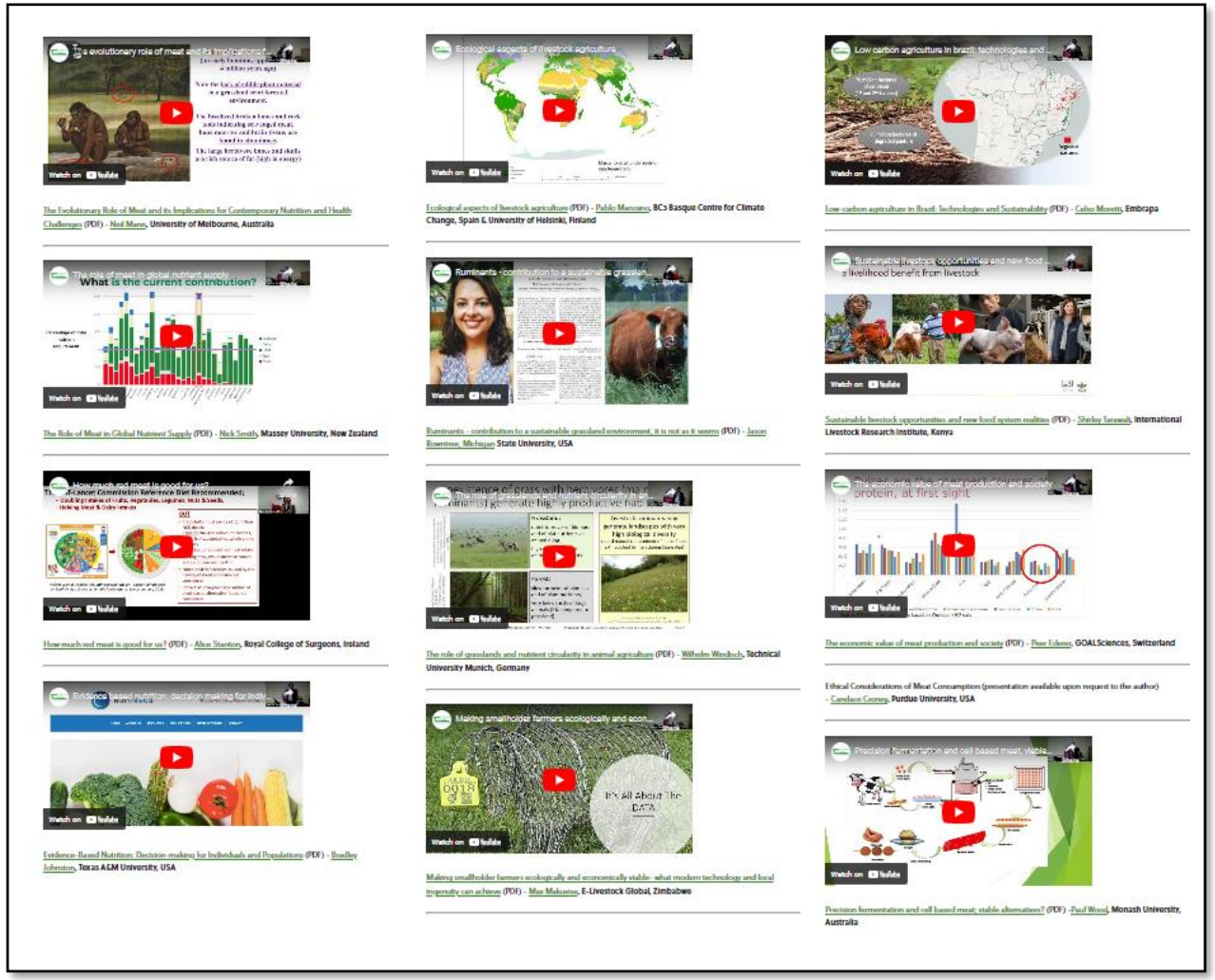
- The restriction of meat through policy: the past, the present and the future - Frédéric Leroy, **Vrije Universiteit Brussel, Belgium**
- The next steps – telling the world - Peer Ederer, **GOALSciences, Switzerland**

Closing Address

On the future importance of facts in the meat and livestock debate- **Mairead McGuinness, European Commissioner for Financial Stability, Financial Services and the Capital Markets Union**

Origins: the “Dublin Summit” – recordings of the presentations

https://www.teagasc.ie/food/research-and-innovation/research-areas/food-quality-and-sensory-science/meat-technology/international-meat-summit



Presentations by experts

- **Neil Mann**, University of Melbourne, Australia
- **Nick Smith**, Massey University, New Zealand
- **Alice Stanton**, Royal College of Surgeons, Ireland
- **Bradley Johnston**, Texas A&M University, USA
- **Pablo Manzano**, Basque Centre for Climate Change, Spain
- **Jason Rowntree**, Michigan State University, USA
- **Wilhelm Windisch**, Technical University Munich, Germany
- **Max Makuvise**, E-Livestock Global, Zimbabwe
- **Celso Moretti**, Embrapa, Brasil
- **Shirley Tarawali**, ILRI, Kenya
- **Peer Ederer**, GOALSciences, Switzerland
- **Candace Croney**, Purdue University, USA
- **Paul Wood**, Monash University, Australia
- **Frédéric Leroy**, Vrije Universiteit Brussel, Belgium

The Dublin Declaration of Scientists

The Dublin Declaration

START SIGN SIGNATURES ACTIVITIES | ENGLISH FRENCH PORTUGUESE SPANISH GERMAN ITALIAN

THE DUBLIN DECLARATION OF SCIENTISTS ON THE SOCIETAL ROLE OF LIVESTOCK

Purpose of this Declaration

Livestock systems must progress on the basis of the highest scientific standards. They are too precious to society to become the victim of simplification, reductionism or zealotry. These systems must continue to be embedded in and have broad approval of society. For that, scientists are asked to provide reliable evidence of their nutrition and health benefits, environmental sustainability, socio-cultural and economic values, as well as for solutions for the many improvements that are needed. This declaration aims to give voice to the many scientists around the world who research diligently, honestly and successfully in the various disciplines in order to achieve a balanced view of the future of animal agriculture.

Challenges for Livestock

Today's food systems face an unprecedented double challenge. There is a call to increase the availability of livestock-derived foods (meat, dairy, eggs) to help satisfy the unmet nutritional needs of an estimated three billion people, for whom nutrient deficiencies contribute to stunting, wasting, anaemia, and other forms of malnutrition. At the same time, some methods and scale of animal production systems present challenges with regards to biodiversity, climate change and nutrient flows, as well as animal health and welfare within a broad One Health approach. With strong population growth concentrated largely among socioeconomically vulnerable and urban populations in the world, and where much of the populace depends on livestock for livelihoods, supply and sustainability challenges grow exponentially and advancing evidence-based solutions becomes ever more urgent.

KEY MESSAGES

- This declaration aims <u>to give voice</u> to the many scientists around the world who research diligently, honestly and successfully […] to achieve a balanced view of the future of animal agriculture.
- Today's food systems face an unprecedented <u>double challenge</u>. There is a call to increase the availability of livestock-derived foods [but] at the same time, some methods and scale of animal production systems present challenges with regards to biodiversity, climate change and nutrient flows, as well as animal health and welfare […]

The Dublin Declaration of Scientists

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START SIGN SIGNATURES ACTIVITIES | ENGLISH FRENCH PORTUGUESE SPANISH GERMAN ITALIAN

THE DUBLIN DECLARATION OF SCIENTISTS ON THE SOCIETAL ROLE OF LIVESTOCK

Livestock and Human Health

Livestock-derived foods provide a variety of essential nutrients and other health-promoting compounds, many of which are lacking in diets globally, even among those populations with higher incomes. Well-resourced individuals may be able to achieve adequate diets while heavily restricting meat, dairy and eggs. However, this approach should not be recommended for general populations, particularly not those with elevated needs, such as young children and adolescents, pregnant and lactating women, women of reproductive age, older adults, and the chronically ill. The highest standards of bio-evolutionary, anthropological, physiological, and epidemiological evidence underscore that the regular consumption of meat, dairy and eggs, as part of a well-balanced diet is advantageous for human beings.

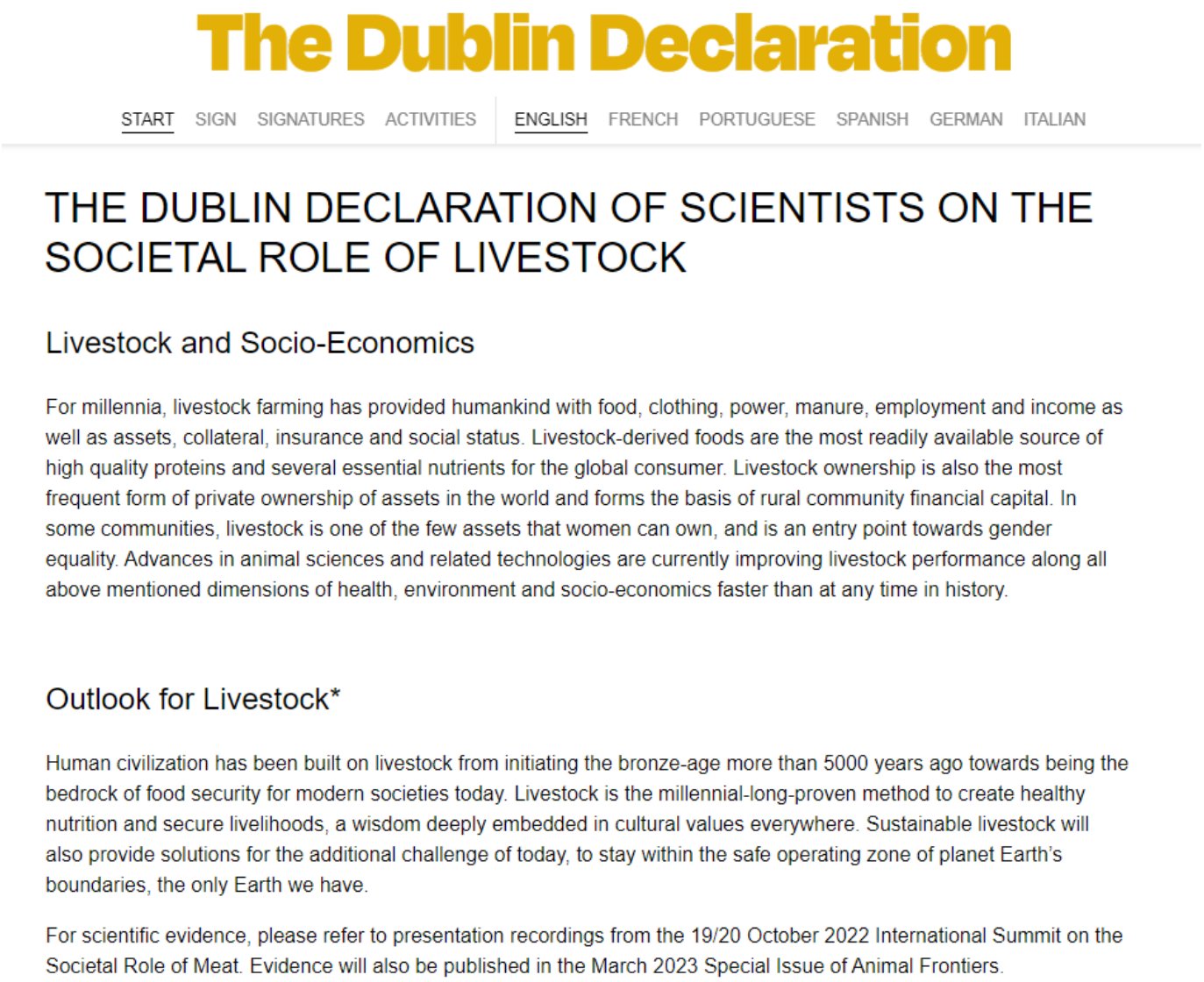
Livestock and the Environment

Farmed and herded animals are irreplaceable for maintaining a circular flow of materials in agriculture, by recycling in various ways the large amounts of inedible biomass that are generated as by-products during the production of foods for the human diet. Livestock are optimally positioned to convert these materials back into the natural cycle and simultaneously produce high-quality food. Ruminants in particular are also capable of valorising marginal lands that are not suitable for direct human food production. Furthermore, well-managed livestock systems applying agro-ecological principles can generate many other benefits, including carbon sequestration, improved soil health, biodiversity, watershed protection and the provision of important ecosystem services. While the livestock sector faces several important challenges regarding natural resources utilization and climate change that require action, one-size-fits-all agendas, such as drastic reductions of livestock numbers, could actually incur environmental problems on a large scale.

KEY MESSAGES

- Well-resourced individuals may be able to achieve adequate diets while heavily restricting meat, dairy and eggs. However, this approach should not be recommended for general populations, particularly not those with elevated needs
- [A]nimals are irreplaceable for maintaining a circular flow of materials in agriculture [and] can generate many other benefits […] While the livestock sector faces several important challenges regarding natural resources utilization and climate change that require action, one-size-fits-all agendas [could] incur environmental problems on a large scale.

The Dublin Declaration of Scientists



The Dublin Declaration

START SIGN SIGNATURES ACTIVITIES | ENGLISH FRENCH PORTUGUESE SPANISH GERMAN ITALIAN

THE DUBLIN DECLARATION OF SCIENTISTS ON THE SOCIETAL ROLE OF LIVESTOCK

Livestock and Socio-Economics

For millennia, livestock farming has provided humankind with food, clothing, power, manure, employment and income as well as assets, collateral, insurance and social status. Livestock-derived foods are the most readily available source of high quality proteins and several essential nutrients for the global consumer. Livestock ownership is also the most frequent form of private ownership of assets in the world and forms the basis of rural community financial capital. In some communities, livestock is one of the few assets that women can own, and is an entry point towards gender equality. Advances in animal sciences and related technologies are currently improving livestock performance along all above mentioned dimensions of health, environment and socio-economics faster than at any time in history.

Outlook for Livestock*

Human civilization has been built on livestock from initiating the bronze-age more than 5000 years ago towards being the bedrock of food security for modern societies today. Livestock is the millennial-long-proven method to create healthy nutrition and secure livelihoods, a wisdom deeply embedded in cultural values everywhere. Sustainable livestock will also provide solutions for the additional challenge of today, to stay within the safe operating zone of planet Earth's boundaries, the only Earth we have.

For scientific evidence, please refer to presentation recordings from the 19/20 October 2022 International Summit on the Societal Role of Meat. Evidence will also be published in the March 2023 Special Issue of Animal Frontiers.

KEY MESSAGES

- Livestock ownership […] forms the basis of rural community financial capital. In some communities, livestock is one of the few assets that women can own, and is an entry point towards gender equality
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* The wording of this paragraph is from the Solution Cluster on Sustainable Livestock at the UN Food System Summit 2021.

The Dublin Declaration – endorsed by almost 1000 scientists globally

The Dublin Declaration

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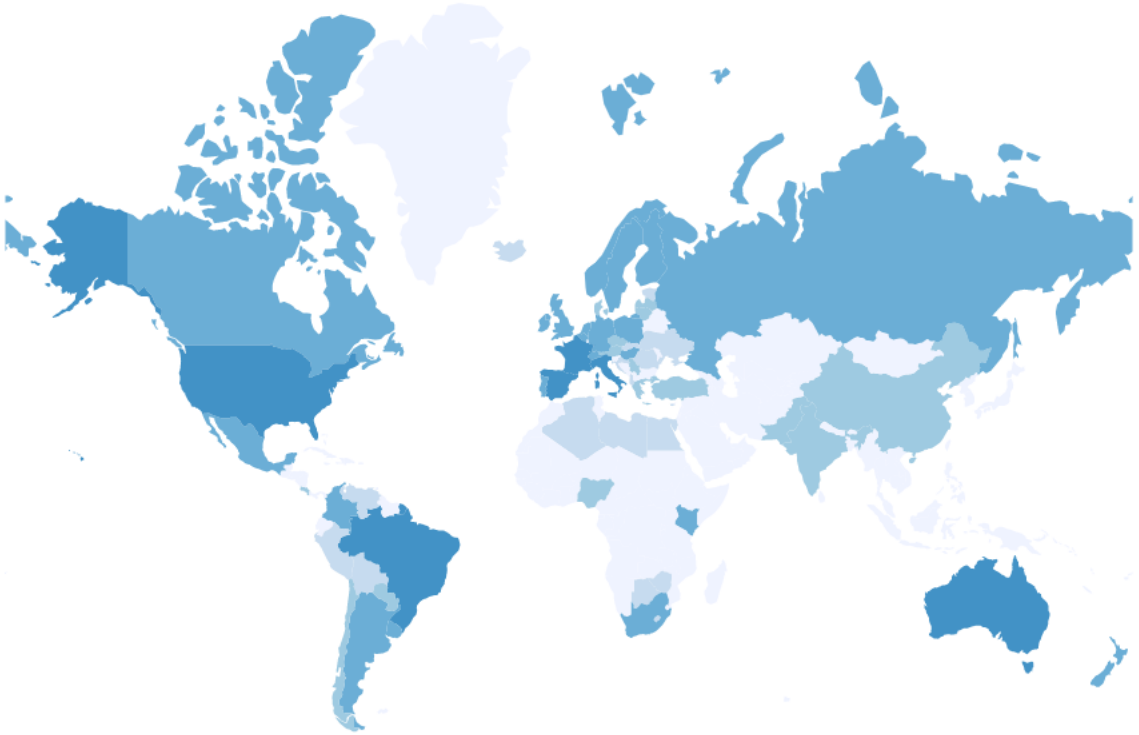

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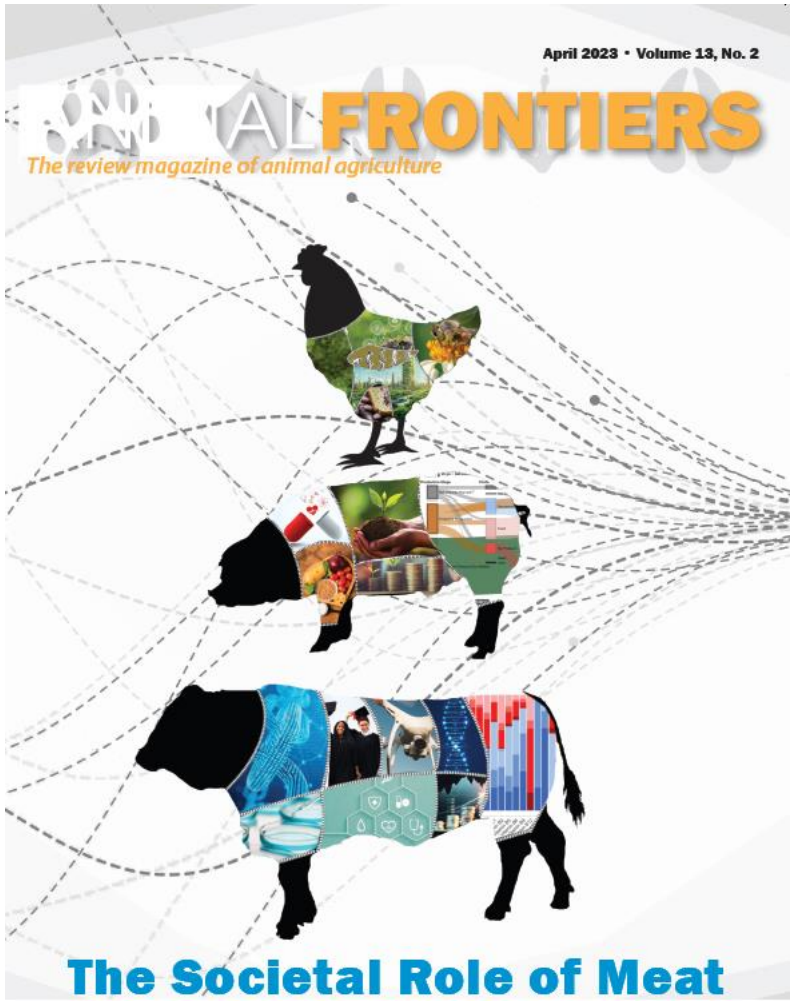
SIGNATURES

Supporting evidence in Special Issue Animal Frontiers (April 2023, vol 13, n°2)



ANIMAL FRONTIERS
The review magazine of animal agriculture

Animal Frontiers is published in 6 issues by the American Society of Animal Science (ASAS), Canadian Society of Animal Science (CSAS), the European Federation of Animal Science (EAAP), the American Meat Science Association (AMSA), the World Association for Animal Production (WAAP) and a rotating guest society. This magazine synthesizes information, through applied reviews, from across disciplines within the animal sciences. **Animal Frontiers** is provided as a benefit to the members of these societies.

The digital version of this magazine is online at **www.animalsciencepublications.org/publications/af**.

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Supporting evidence in Special Issue Animal Frontiers (April 2023, vol 13, n°2)

Introduction

The societal role of meat—what the science says

Peer Ederer,[†] and Frédéric Leroy[‡]

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[‡]Industrial Microbiology and Food Biotechnology (IMDO), Faculty of Sciences and Bioengineering Sciences, Vrije Universiteit Brussel, Brussels, Belgium

Key words: animal source foods, meat science, nutrition, sustainable livestock, economics of protein, ethics of livestock

Eating meat has been the aspiration for an enjoyable and nutritious meal in most cultures and during most times for at least as long as there are written records, and likely far back to the earliest days of our genus some 2 million yr ago. Nonetheless, history also indicates that there has been frequent and prominent advice to abstain from meat or even prohibit its consumption, for cultural, spiritual, nutritional, or economic reasons. The societal debate around the value of meat is neither new nor has it been dispassionate. Science has been a participant in this debate from early on as well. While Pythagorean communities abstained from meat based on reincarnation theories, Aristotle came to the reasoned conclusion based on everything that he knew about 2,300 yr ago: "*The tame animals are for the use and nourishment of mankind, while the wild ones, if not all, most of them, are on account of nourishment and help, in order that clothes and other tools come to be from these. And therefore, if nature does nothing in vain or without a purpose, it is necessary that nature made all of these on account of humans*" (Aristotle, Politics, 1256b10-22). It is therefore fair for every generation to reask this question considering the best and most recent scientific evidence available: should eating meat in sufficient portions be a common and important part of the standard human diet?

This Special Issue of Animal Frontiers aims to provide a synopsis of answers which represent the currently available best scientific evidence. The answers are given on major considerations pertaining to eating meat, including its impact on human nutrition and health, environmental sustainability, economic affordability, and ethical justification. To this end, we invited a broad group of leading international scientists to interpret the scientific evidence for the benefit of making it accessible to the communities of policy makers, industry practitioners, journalists, common consumers, and fellow scientists alike. Our request of the authors was not to reflect on the most granular levels of current scientific argumentation on each of these topics. That would have been impossible and would never do justice to the quality and intensity of these debates within the scientific community. Instead, we asked them to derive what can be robustly learned and has most societal significance, from the scientific evidence as it currently stands.

As guest editors of this Special Issue, we wish to emphasize our trust in the value of scientific debate, and in the ongoing questioning and challenging of what may appear as common knowledge or as an established paradigm. Science progresses by asking questions more so than by providing answers. We take Karl Popper's epistemology as a guide, so that at best, we can know what is not true. Similar principles characterize this Special Issue: we appreciate and ask for debate on how to interpret the scientific evidence; we decidedly reject torturing the data until it confesses to a desired outcome; we want to neither suppress the inherent complexity of the subject; nor do we want to hide behind it.

Livestock and Human Health

As it is often argued that the eating of meat is justified by its contribution to the nutritional needs of global populations, we felt that this was the first key element that needed to be confronted with scientific evidence. The opening article of this Special Issue, "The role of meat in the human diet: Evolutionary aspects and nutritional value" (Leroy et al., 2023), initiates the discussion with the following questions: 1) is meat indeed to be considered as a meaningful part of the species-adapted diet of humans; 2) are there nutrients that can become compromised when abstaining from meat; 3) how does meat contribute to the supply of these nutrients globally; and 4) which risks may be created by a large reduction in meat consumption? The article demonstrates that *Homo sapiens* evolved to be persistent and frequent meat eaters, so that it can be assumed that meat is at least compatible with human anatomy and metabolism. Moreover, given that meat represents a high-quality food matrix for digestibility and absorption of a broad spectrum of nutrients, several of which being already limiting factors in diets worldwide, it seems fair to state that the dietary role of meat is not straightforward to replace. In fact, populations that have scant access to meat tend to suffer from the typically expected health problems associated with low intake of

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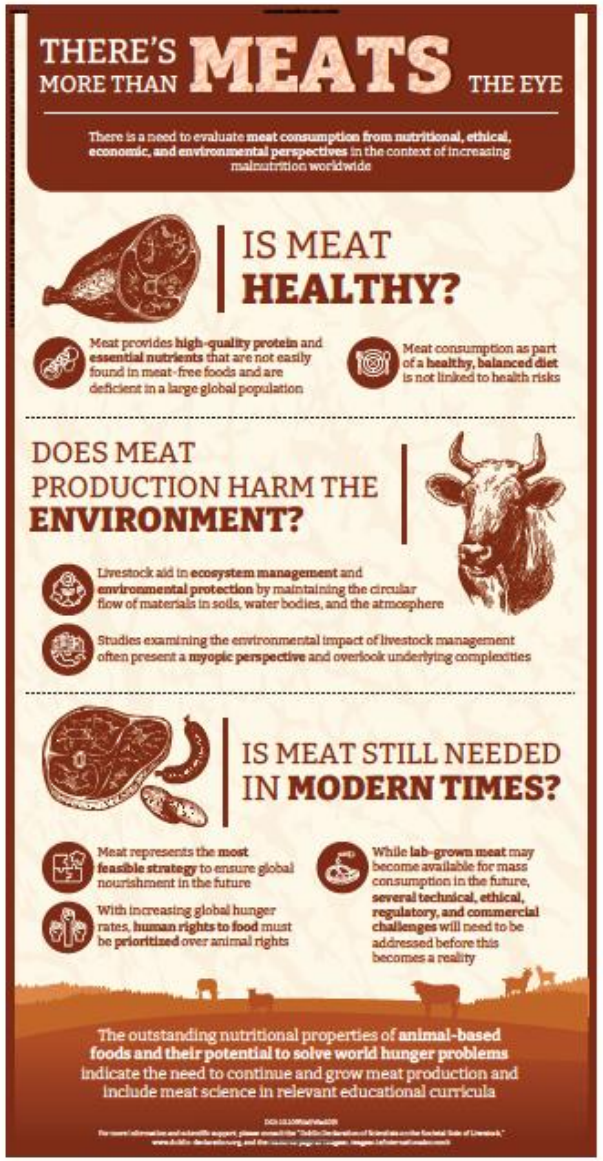

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As of the publication date, there are 750 signatures from across the globe.
Scientists are invited to sign this declaration at https://www.dublin-declaration.org/

* The wording of this paragraph is from the Solution Cluster on Sustainable Livestock at the UN Food System Summit 2021.

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