



Food and Agriculture
Organization of the
United Nations



Animal health and climate change



Protecting the health of animals
to help reduce the effects of our changing
climate on hunger and poverty

The climate crisis



Livestock support more than 750 million of the world's poorest people

Climate change may be the greatest challenge of our time. Reducing the impacts, mitigating its effects and adapting to changes is a global and urgent priority.

Awareness is increasing that our planet and societies are acutely vulnerable to changes in climate, and the food and agricultural sectors are no exception.

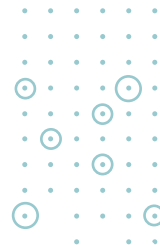
Eliminating hunger, reducing poverty and making agriculture, forestry and fisheries more productive and sustainable cannot be achieved without decisive action on climate change. At the same time, climate change cannot be addressed if the world's natural resources and agricultural systems are not managed sustainably.

The Food and Agriculture Organization of the United Nations (FAO) has laid out a strategy to tackle the complex relationship between **food security**, **sustainable development** and **changing climate**.

The important role of **animal health** within this nexus should now be further explored.

'I have long understood that climate change is not only an environmental issue – it is a humanitarian, economic, health, and justice issue as well'

Frances Beinecke



'Climate change is moving faster than we are'
António Guterres



©FAO/Melchior Osiedo

Animal health and climate change

Impact

A changing climate can have devastating impacts on the health of animals. It can also affect disease patterns, making outbreaks harder to control. Livelihoods that depend on animals are becoming less secure as a result.



DIRECT IMPACTS

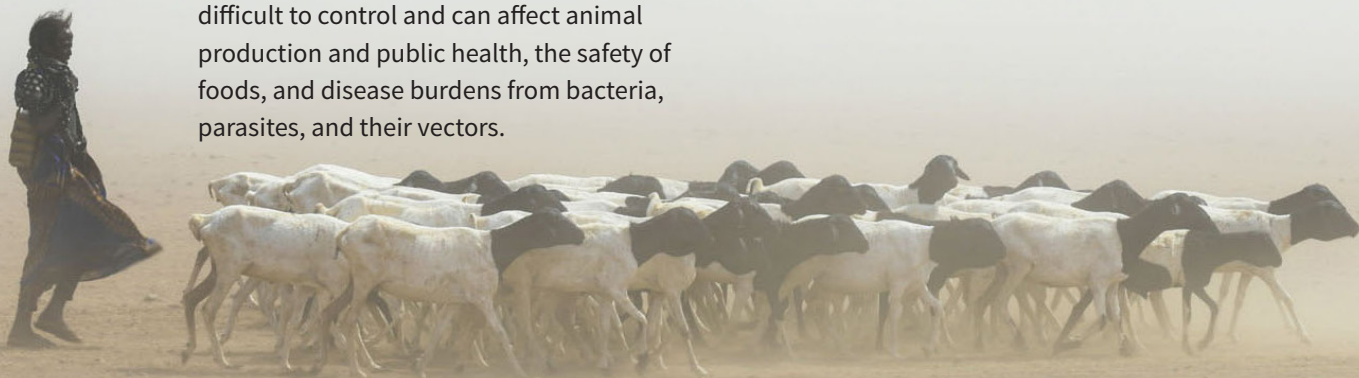
Climate-driven fluctuations in environmental conditions such as droughts, fires, floods, heat stress and unpredictable weather influence the physiological and immune responses in livestock.



INDIRECT IMPACTS

Climate change affects incidence, spread and predictability of animal diseases.

The stress caused by these factors is difficult to control and can affect animal production and public health, the safety of foods, and disease burdens from bacteria, parasites, and their vectors.



Animal health should be considered an integral part of climate change strategies. Firstly, to reduce impacts of climate change on animal health, and to work with the animal health sector to mitigate effects and adapt to climate changes.

Climate change, through complex interactions with hosts, vectors and environment, has facilitated the spread of the bluetongue virus into Europe, Rift Valley fever in Africa, and highly virulent influenza viruses in Asia.

The temperate regions may become more suitable for tropical vector-borne diseases such as Rift Valley fever, African horse sickness, West Nile virus and schistosomiasis.

Continuing uncertainty about how climate changes will affect livestock disease, leads to greater difficulty in preparing for and reducing disease impact. The interplay with other global changes such as land use, globalization of trade and population movement add to unpredictability.

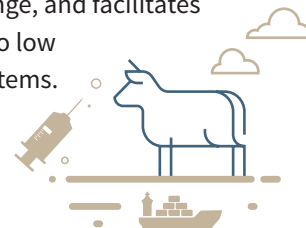
Mitigation

It is now well recognised that livestock production is responsible for substantial contributions to greenhouse gas emissions. Much less-known is the fact that **healthier animals are more productive and generate lower emissions per weight of product.**

Improving animal health reduces emission intensity and enhances resource use efficiency by reducing mortality, and improving productivity and fertility. Fewer animals are then needed to meet demands.

The positive contribution that animal health makes to improving production while lowering emissions has been demonstrated for a number of diseases – mastitis, African trypanosomosis, helminthoses, East Coast fever and foot and mouth disease.

Good animal health facilitates trade and exchange, and facilitates the move to low carbon systems.



Adaptation

Many livestock systems are highly adapted to cope with an unpredictable or erratic climate, and hundreds of millions of vulnerable people already rely on livestock to support them through challenging environmental changes.



Animals are more resilient than crops to adapt to marginal conditions and withstand climate shocks.

However, a range of endemic and epidemic animal diseases hamper the ability of the livestock sector to fulfil its potential for climate change resilience and adaptation.

Opportunities

Impact

CHALLENGES

Reduce the impact of climate change on animal health and on the spread of infectious diseases.

OPPORTUNITIES FOR ACTION

- Strengthen and expand global and national platforms, infrastructures and tools to prevent, prepare and respond to animal health-related emergencies triggered by climate change.
- Develop capacity for epidemiological monitoring of diseases and their vectors.
- Promote research to model and forecast the impact of climate change on the spread of infectious diseases.

FAO ACTIONS

FAO works to improve prevention, preparedness, early detection and early response to animal health threats and emergencies that could be triggered by climate change through:

- Key tools and mechanisms including the Emergency Prevention System that **maps and tracks disease outbreaks** and develops regional risk management strategies to tackle these, and the Emergency Management Centre for Animal Health that provides response support to control high impact disease events.
- Strengthening national capacities in **animal disease surveillance, preparedness and control** by:
 - supporting and delivering workforce development and training.
 - developing capacity assessment tools for in-country use.



Mitigation and Adaptation

CHALLENGES

Improve animal health to:

- reduce greenhouse gas emissions from the livestock sector.
- enhance resilience of vulnerable communities to climate change.

OPPORTUNITIES FOR ACTION

- Strengthen animal health systems by investing in the public and private sector.
- Promote the progressive control and elimination of priority animal diseases.
- Promote One Health approaches to disease control – involving public, private, wildlife and environmental health sectors.
- Enhance animal health as part of the overall sanitary requirements for circular agri-food systems, facilitating recycling of different biomass streams.



FAO ACTIONS

FAO, in collaboration with strategic partners, including the World Organisation for Animal Health, World Health Organization and International Atomic Energy Agency, champions **global and regional animal health programmes and strategies for priority animal diseases**, including:

- Global plan to respond to zoonotic **influenza**
- Global Strategy for the Control and Eradication of **Peste des Petits Ruminants**
- Global **Foot and Mouth Disease** Control Strategy
- Regional strategies on **African swine fever**
- Programme Against **African Trypanosomosis**

To reduce emissions in the livestock sector, FAO assesses animal health-related opportunities.

The Global Livestock Environmental Assessment Model (GLEAM) is a framework that simulates interactions between livestock production and the environment. It allows experts to estimate greenhouse gas emissions from the livestock sector, including the reduced contribution due to improved animal health.

Investment in animal health will always improve food security, even if future climate patterns are difficult to predict

A call for action

There are a number of priority areas in which FAO's work at the interface of animal health and climate change could be strengthened in order to improve food security while protecting the planet:

- **Strengthen and expand** global and national platforms, policies, infrastructures and tools to prevent, prepare and respond to animal health-related emergencies triggered by climate change.
- **Promote research** to enhance our ability to forecast future animal health threats caused or exacerbated by climate change.
- **Promote innovation and technology** in animal health and strengthen surveillance for managing the threat of emerging diseases under climate change.
- **Strengthen national veterinary systems**, focusing on countries projected to be more vulnerable to, or at risk of, the impacts of climate change.
- **Pursue a One Health approach** by promoting the inclusion of animal health packages in FAO and partners' initiatives and projects aimed at mitigating and adapting to climate change.
- **Ensure options for addressing animal health**, which will also address climate change – impact reduction, mitigation and adaptation – are well-promoted throughout other dimensions of the livestock sector such as feeding, genetic resources, production systems, food safety and value chains.
- **Build partnerships**, engage the private sector, and strengthen international collaboration for a global response to the climate challenge and related animal health threats.



Email: AGA-Director@fao.org
Website: www.fao.org/animal-health



Some rights reserved. This work is available under a CC BY-NC-SA 3.0 IGO licence