

中国畜牧业的绿色转型实践研究报告

Green Transition of China Livestock Industry

二〇二五年七月

概要

气候变化是全人类的共同挑战。在共同应对全球气候危机大背景下，各国政府纷纷制定碳中和目标，推动能源绿色低碳转型。2020年9月，习近平主席在联合国大会上庄严承诺中国在2030年前实现碳达峰、2060年前实现碳中和。中国将应对气候变化纳入国民经济和社会发展规划，并加快构建碳达峰、碳中和“1+N”政策体系，积极采取措施有效控制温室气体排放。

全球人类活动导致的温室气体排放中，除化石燃料排放之外，畜牧业也是重要来源之一。据联合国粮农组织和世界资源研究所统计，全球畜牧业的温室气体排放约占人类活动排放总量的14.5%，饲料生产与加工、反刍动物肠道发酵是畜牧业两个主要排放源，分别占全球畜牧业总排放量的45%和39%¹。因此，加快畜牧业可持续发展，对于实现农业农村地区的碳减排，推动完成全球气候治理目标至关重要。

为了更好地促进畜牧业可持续转型升级，实现中国的碳中和目标，本研究结合公开数据、调研数据和文献资料，运用数据统计分析、专家访谈、案例调研等方法，对中国畜牧业的现状及可持续转型进行深入研究，提出以下政策建议。

第一、国家层面优化顶层设计，明确畜牧业在气候变化整体工作中的定位。在农业支持政策方面，促进养殖行业系统“模式”创新，关注大型集约化养殖的隐性成本，鼓励多元化发展模式，如种养循环、生态养殖和福利养殖等，引导行业向环境友好、带动小农户共同富裕

¹ 以畜牧养殖应对气候变化——全球温室气体排放评估与减排
<https://openknowledge.fao.org/server/api/core/bitstreams/f6262add-54dc-4de6-b229-d3c9f94baa62/content#:~:text=%E6%8D%AE%E4%BC%B0%E7%AE%97%EF%BC%8C%E7%95%9C%E7%89%A7%E4%B8%9A%E6%AF%8F%E5%B9%B4,9%EF%BC%85%E5%92%8C8%EF%BC%85%E3%80%82>

的模式转型升级。

第二、部委层面推动开展畜牧业生态环境绿色转型相关技术规范的研究工作。梳理已有政策措施、技术规范，基于行业发展现状，结合不同地区自然条件、经济发展水平及政策实施情况的差异，进一步完善畜牧业污染防治和碳减排相关政策措施、技术规范等。

第三、探索创新基于生态农业的精细化管理模式。借鉴国际经验，实现养殖场对畜禽废弃物的综合利用、减少环境污染，有效减少畜牧业生产对自然资源的影响，提高畜牧业绿色发展水平。

第四、树立多渠道、多源头化、多供应体系的“大食物观”。鼓励农业科技研发新型食物选择，推动替代蛋白和新蛋白产品的探索，进一步丰富食物系统供应，从而为粮食安全提供保障。

第五、推动政策宣传和膳食营养教育，引导居民选择绿色生活方式和平衡膳食结构。鼓励消费者参照《中国营养膳食指南》以及其他健康膳食建议，形成科学健康膳食模式，扭转过量肉源性食品消费行为，杜绝消费端食物浪费，推动更可持续的饮食和生活方式。

Abstract

Climate change is a common challenge for all humankind. In a significant commitment to this global challenge, China ratified the Paris Agreement on September 3, 2016. To tackle the climate crisis, the Chinese government has set ambitious carbon-neutral targets and initiated a green and low-carbon energy transition. In September 2020, President Xi Jinping made a pledge at the 75th United Nations General Assembly that China aims to reach its peak in carbon emissions by 2030 and achieve carbon neutrality by 2060. An action plan has been developed towards these objectives. As part of this commitment, China has integrated climate change into its national economic and social development plan and accelerated the implementation of the "1+N" policy system to effectively reduce greenhouse gas emissions.

The IPCC notes that agriculture is a significant source of greenhouse gas emissions globally, contributing about 21% to 37%² of total anthropogenic GHG emissions when considering the entire food system, including land use changes, production, processing, transport, retail, consumption, and waste. Livestock is an important source of greenhouse gas emissions caused by global human activities. According to the Food and Agriculture Organization (FAO), GHG emissions from the livestock sector account for about 14.5% of the total emissions from human activities, and animal feed production and processing, as well as enteric fermentation of ruminants, are the two main sources of emissions from the livestock sector, accounting for 45% and 39% respectively of the total emissions from the livestock sector. Accelerating the sustainable development of the livestock sector is therefore critical to achieving carbon reduction and sequestration in rural and arable areas and long-term food security, as well as achieving China's carbon neutrality targets.

To promote the sustainable transition of the livestock industry and achieve China's carbon neutrality goals, this study, using public data, survey data, and

² Special Report on Climate Change and Land
<https://www.ipcc.ch/srccl/chapter/chapter-5/>

literature resources along with statistical analysis, expert interviews, and case studies, conducted an in-depth analysis of the current state and sustainable transition of China's livestock industry, offers the following recommendations:

1. Optimize Top, National Level Design to Address the Emission of Livestock in Climate Action

Agricultural policies must promote food systems transformation and innovative farming models. This includes encouraging diversified food sources, addressing the hidden costs of large-scale intensive farming, and supporting cyclical and ecological livestock practices to curb rampant investment-driven expansion. These measures are critical to prioritize environmentally friendly practices while fostering shared prosperity for smallholders, and ensuring food security.

2. Promote Research on Policies and Standards for Green Transition of Livestock Environmental Protection at the Ministerial Level

A comprehensive review and amendment of existing policies and technical standards for livestock pollution control and carbon reduction is needed. This must be based on the current state of the livestock industry and regional differences in natural conditions, economic development, and policy implementation.

3. Explore Innovative, Agroecology-Based, Precision Management Models

Drawing on international experience, actively develop guidelines for each stage of manure production, management, and utilization in the livestock industry to ensure that crops receive adequate fertilizer precisely when needed for optimal growth. This approach maximizes the comprehensive utilization of livestock waste, reduces environmental pollution. Such practices effectively address the burden of livestock production on natural resources and enhance the green development of the livestock sector.

4. Establish a Diversified, Multi-Sourced, and Multi-Supply “Big Food System” Perspective

Encourage agricultural technology to develop new food options and promote the exploration of sustainable protein products. A diversified food system and supply chain can stabilize food security, meet growing nutritional needs, enrich protein sources, and ensure a steady protein supply³.

5. Promote Policy Advocacy and Nutritional Education to Foster Sustainable Lifestyles and Balanced Diets

Public education campaigns should encourage consumers to follow the Chinese Dietary Guidelines⁴ and other healthy dietary recommendations, fostering a balanced dietary model. This approach aims to reduce excessive consumption of animal-based foods, prevent food waste at the consumption stage, and promote more sustainable eating habits and lifestyles.

³ <https://justfoodtransitionroadmap.com/>

⁴ <http://dg.cnsoc.org/>