It is observed that HEVs performed better than gasoline vehicles particularly in city driving environments and at low speeds (45% less average fuel consumption rate (FCR)). In addition, low temperatures tend to have a deteriorating effect. The fuel economy of commercial hybrid electric vehicles (HEVs) is also investigated and compared to standard gasoline vehicles. The relationship between GHG, and the built environment (BE) and transit supply (TS) is investigated using different statistical regression approaches such as a latent class-regression modeling consideration (e.g. travel modes, vehicle occupancy, link-level speeds considering traffic conditions, road and vehicle type). The empirical evidences of the thesis are presented in the context of Quebec's three largest metropolitan areas: Montreal, Quebec City and Sherbrooke. The replacement of older vehicles with newer ones in these areas is expected to result in significant emission reductions.
The world's atmosphere is a common resource. Air quality, along with energy, transportation, and climate change have significant impacts on our lives and this book helps readers understand the changes happening at the nexus of these areas, as they relate to reducing greenhouse gas emissions and improving air quality. Discussing the transitions to electric vehicles, solar and wind energy for electricity generation, battery developments, smart grids and electric...
Reducing Greenhouse Gas Emissions and Improving Air Quality

The TRB's second Strategic Highway Research Program (SHRP 2) Report S2-C09-RR-1: Incorporating Greenhouse Gas Emissions into the Collaborative Decision-Making Framework identifies where and how greenhouse gas (GHG) emissions and energy consumption fit into a conceptual decision-making framework, including key decision points. The report presents background information on the role of GHG emissions in the transportation sector, factors influencing the future of emissions, GHG emissions reduction strategies, as well as information on cost effectiveness and feasibility of these reduction strategies. It also presents case studies to illustrate different scales and institutional contexts for GHG and energy consumption.

The GHG Protocol Corporate Accounting and Reporting Standard helps companies and other organizations to identify, calculate, and report GHG emissions. It is designed to set the standard for accurate, complete, consistent, relevant and transparent accounting and reporting of GHG emissions.


FAO conducted a detailed analysis of GHG emissions at multiple stages of various livestock supply chains, including the production and transport of animal feed, on-farm energy use, emissions from animal digestion and manure decay, as well as the post-slaughter transport, refrigeration and packaging of animal products. This report represents the most comprehensive estimate made to-date of livestocks contribution to global warming as well as the sectors potential to help tackle the problem. This publication is aimed at professionals in food industries and agriculture as well as policy makers.

Global climate change is a natural process that currently appears to be strongly influenced by human activities, which increase atmospheric concentrations of greenhouse gases (GHG), in particular carbon dioxide (CO2), methane (CH4) and nitrous oxide (N2O). Contributing to this increase of GHGs in the atmosphere are agricultural activities, particularly livestock production. Greenhouse gas emissions by the livestock sector could be cut by as much as 30 percent through the wider use of existing best practices and technologies. FAO conducted a detailed analysis of GHG emissions at multiple stages of various livestock supply chains, including the production and transport of animal feed, on-farm energy use, emissions from animal digestion and manure decay, as well as the post-slaughter transport, refrigeration and packaging of animal products. This report represents the most comprehensive estimate made to-date of livestocks contribution to global warming as well as the sectors potential to help tackle the problem. This publication is aimed at professionals in food industries and agriculture as well as policy makers.

Greenhouse gas emissions by the livestock sector could be cut by as much as 30 percent through the wider use of existing best practices and technologies. FAO conducted a detailed analysis of GHG emissions at multiple stages of various livestock supply chains, including the production and transport of animal feed, on-farm energy use, emissions from animal digestion and manure decay, as well as the post-slaughter transport, refrigeration and packaging of animal products. This report represents the most comprehensive estimate made to-date of livestocks contribution to global warming as well as the sectors potential to help tackle the problem. This publication is aimed at professionals in food industries and agriculture as well as policy makers.
Methods for Estimating Greenhouse Gas Emissions From Inventory Methodologies. As the first book to compile national greenhouse gas emission estimates prepared by national experts in developing countries and countries with economies in transition, this will be an invaluable resource to international databases. Papers also discuss inventory development issues, such as data collection and emission factor determination, and problems associated with applying the IPCC inventory methodologies. The preliminary inventory as well as regional and global syntheses of the national results. The regional and global syntheses also discuss results of eleven other preliminary national inventories that have been published elsewhere with the assistance of other...
Methods for estimating greenhouse gas emissions from smallholder agriculture. Standard guidelines for use by scientists, development organizations will help generate reliable data on emissions baselines and allow rigorous comparisons of mitigation options. The guidelines methodological rigor, measurement costs, and the diversity of approaches, coupled with the demand for robust information suggest it is germane for the scientific community to establish standards of measurements for quantifying GHG smallholder agriculture. Greenhouse gas measurements in agriculture are expensive, time consuming, and error prone, challenges only exacerbated by the heterogeneity of smallholder systems and landscapes. Concerns over livelihood trade-offs. Globally, agriculture is directly responsible for about 11% of annual greenhouse gas (GHG) emissions and induces an additional 17% through land use change, mostly in developing countries. Farms in the developing...
Methods for estimating greenhouse gas emissions from food systems

Abstract: This paper is part of a series detailing new methodologies for estimating key components of agri-food systems emissions, with a view to disseminating the information in FAOSTAT. It describes methods for estimating greenhouse gas (GHG) emissions through livestock production and forage, which are major contributors to global climate change. The objective of the study was to develop and validate a model that could be used by cow-calf producers, extension agents, and researchers to evaluate the economic trade-offs and environmental impacts of various production strategies. The model was developed using data collected from a broad range of sources, including scientific literature, expert interviews, and field observations.

Key findings:
- The model was able to accurately estimate GHG emissions from cow-calf and forage production processes, with a root mean square error of less than 10%.
- The model identified several key factors that influence GHG emissions, including feed type, water usage, and manure management.
- The model also demonstrated the potential for reducing GHG emissions through targeted management practices, such as improved feed efficiency and manure management.

Conclusion: The development of this model marks a significant step forward in the estimation of GHG emissions from livestock and forage production. The model provides a valuable tool for producers, extension agents, and researchers to evaluate the economic and environmental impacts of various production strategies, and to identify opportunities for reducing GHG emissions.

Carbon footprint is a tool commonly used to describe the total amount of carbon dioxide and other greenhouse gas emissions for which an individual or organization is responsible. ADB's South Asia Department (SARD) carried out this study to explore possible approaches and methods to calculate the carbon footprint from its road activities and their total contributions on SARD's overall activities in India. India was selected for this study because it represents all types of SARD activities (highways, national roads, and rural roads) and the project locations range from urban to rural areas with different ecological conditions. A model of calculating carbon footprint—construction, operation, and maintenance—of road projects was developed, and this model was tested and presented using data from SARD projects in India.

Climate Change Impact on Livestock: Adaptation and Mitigation

In the 21st century, management of municipal solid waste (MSW) continues to be an important environmental challenge facing the U.S. Climate change is also a serious issue, & the U.S. is embarking on a number of voluntary actions to reduce the emissions of greenhouse gases (GHGs) that can intensify climate change. By presenting material-specific GHG emission factors for various waste management options, this report examines how the two issues—MSW management & climate change—are related. The report's findings may be used to support a variety of programs & activities, including voluntary reporting of emission reductions from waste management practices. Charts, tables & graphs.