

## Life Cycle-Based Analysis of Meat Production: Ecosystem Impacts

**Authors :** Michelle Zeyuan Ma, Hermann Heilmeier

**Abstract :** Recently, meat production ecosystem impacts initiated many hot discussions and researchers, and it is a difficult implementation to reduce such impacts due to the demand of meat products. It calls for better management and control of ecosystem impacts from every aspects of meat production. This article analyzes the ecosystem impacts of meat production based on meat products life cycle. The analysis shows that considerable ecosystem impacts are caused by different meat production steps: initial establishment phase, animal raising, slaughterhouse processing, meat consumption, and wastes management. Based on this analysis, the impacts are summarized as: leading factor for biodiversity loss; water waste, land use waste and land degradation; greenhouse gases emissions; pollution to air, water, and soil; related major diseases. The article also provides a discussion on a solution-sustainable food system, which could help in reducing ecosystem impacts. The analysis method is based on the life cycle level, it provides a concept of the whole meat industry ecosystem impacts, and the analysis result could be useful to manage or control meat production ecosystem impacts from investor, producer and consumer sides.

**Keywords :** eutrophication, life cycle based analysis, sustainable food, waste management

**Conference Title :** ICSAFS 2018 : International Conference on Sustainable Agricultural and Food Systems

**Conference Location :** Amsterdam, Netherlands

**Conference Dates :** May 10-11, 2018