Research to prevent methane emission from ruminant livestock and associated damage to the environment

Ruminant animals can live on a diet of newspaper and chicken manure and other things we humans can not utilise. This is due to a clever digestive system med forestomachs filled with micro organisms that can convert these "feeds" into nutrients of value to the animal (and later also us humans in the form of high quality food). Unfortunately certain of the microorganisms also produce methane, which is a serious green house gas. It has given ruminants a dubious reputation in the climate debate, and has raised questions as to whether it is environmentally sound to consume beef and other food products of (ruminant) animal origin. The methane produced from ruminants on a global scale not only comes from microorganisms in the forestomachs, but also from rain forest when it is cleared to provide new pasture areas for cattle.

It is the aim of this PhD project in animal nutrition and production systems at KU-LIFE to:

1) develop strategic ways of feeding and managing ruminant livestock to markedly reduce methane emission
2) and to utilise the knowledge gained to develop more sustainable ruminant livestock production systems (highly targeted also at developing countries) by:
    a. altering feeding and other management systems in a direction favouring income generation, ie*. higher economical sustainability,*
    b. and markedly reduce requirements for grazing, hence eliminating the need and incitament for clearing of (rain) forest, ie a *higher environmental sustainability*

The PhD project will comprise experiments under controlled conditions at experimental animal facilities in Denmark to address the first of these aims, combined with trials under field conditions in Africa.

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