

Accelerate genetic progress to reduce methane emission – **Global Methane Genetics initiative**

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Global Methane Genetics (GMG)

Accelerating Genetic Progress to reduce
methane in ruminants



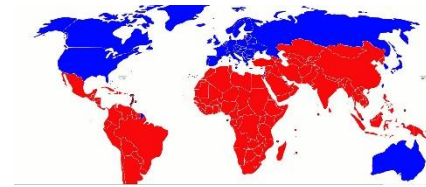
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Newsletter:

<https://www.wur.nl/en/project/global-methane-genetics-initiative.htm>

GMG: Why? How? What?



- Genetic progress can make a **permanent** and **impressive contribution** to reducing methane output from livestock systems **globally**
- We aim to accelerate genetic progress and to implement breeding strategies for reduced methane emissions in ruminants in the **global North and South** by supporting
 - **sharing of protocols and data,**
 - **expanding phenotyping,** breeding program design
 - **genetic evaluations**
 - development of **Global Livestock Genetics and Genomics Programs**

Global Methane Genetics initiative (GMG)

Accelerate genetic progress for low CH₄ emitting ruminants

Investment of 27M US\$

25 countries, 50 partners, 25 breeds

Methane pheno- & genotypes ~110k cattle & sheep, ~20k microbiome

Dairy:

Holstein (~42k)

Jersey (~8k)

(Nordic) Red Breeds
(~7.3k)

Brown Swiss (~3.3k)

World-wide sharing
Develop protocols
Phenotyping for
reference populations
Genetic evaluation
Impact of genetics

Africa

Local breeds & crosses (~4k)

South America

Beef (~7k)

Beef:

North America (~6k)

Australia, Ireland,
UK, NZ (~18.5k)

**Sheep: world-wide
reference population**
Australia & New Zealand
UK & Ireland
Uruguay (~17k)

Microbiome:

World-wide reference
population
(~20k samples)

Global Methane Genetics (GMG) initiative



Key areas – current activities


- Project(s) get started
- Share data – database for external and GMG internal data sharing
- Fair share principle
- SOP for recording & harmonisation of data pipelines across partners
- Build facility to test methane recordings of many individual ruminants

working groups

- Dairy, Beef, Sheep, Africa, South America, Microbiome, **Asia**
- Bring people together and build network
- Share knowledge, experience, hurdles & issues
- Collaborate on key topics
 - E.g. Smaller groups, task force
- 2 meetings a year

- [ICAR Wiki](https://wiki.icar.org/index.php/Guidelines): <https://wiki.icar.org/index.php/Guidelines>
- Section 20: Methane emissions for genetic

ICAR Wiki



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Section 20 – Methane Emission for Genetic Evaluation

 Page

 Discussion

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 History

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NOTE: This version of Section 20 has been approved by the working group's Chair. Please be aware that further revisions may occur before final review and approval by the Board and ICAR members per the [Approval of Page Process](#).

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What we miss - Asia

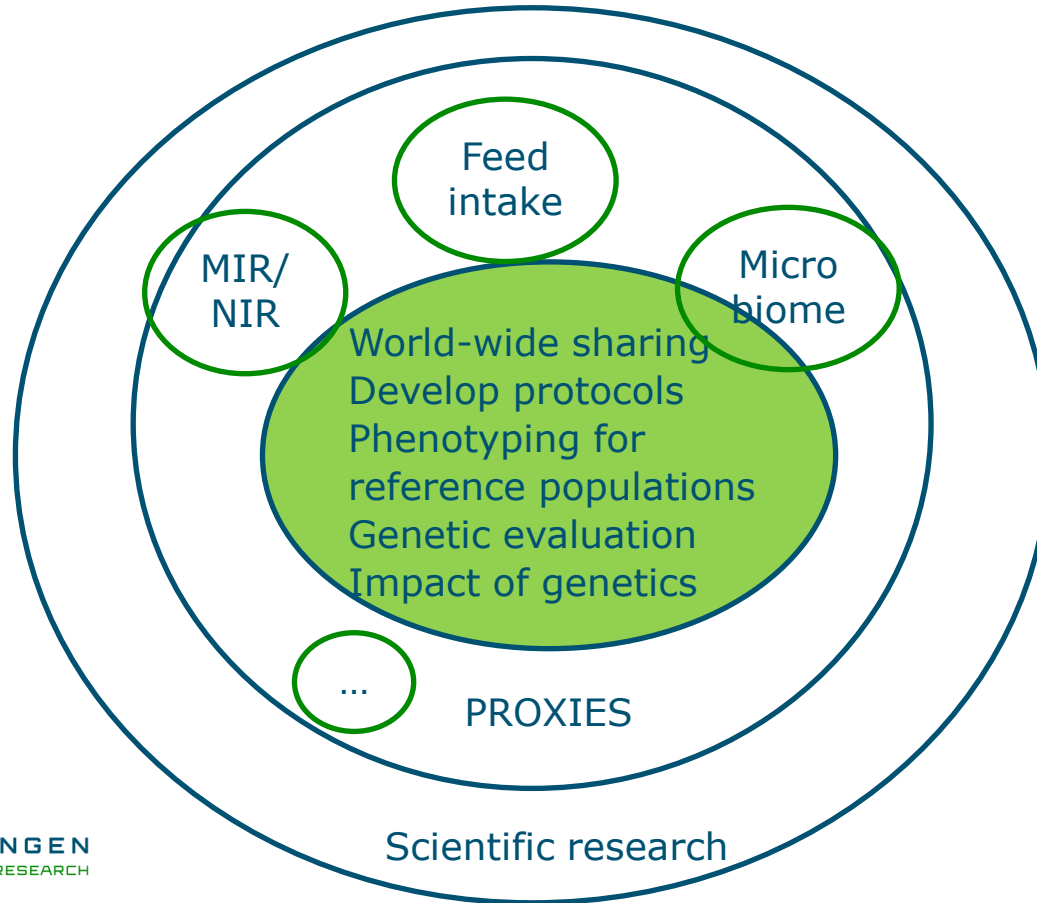
- Invitation Proposal development
- Across-country initiatives preferred rather than single country
- Timeline: proposal development in 2025
- Requirement: data to be made available in GMG database (fair share principle)

Important for proposals

- In the centre of the “**what, HOW and why**” of GMG

To support **sharing of protocols and data**, to **expand phenotyping, breeding program design and genetic evaluations**, underpinning the development of Global Livestock Genetics and Genomics Programs

Our focus looking at proposals



Invest money
in the inner circle

Facilitate networks
linking with the two
outer circles.