



Food and Agriculture
Organization of the
United Nations



Federal Ministry
of Agriculture, Food
and Regional Identity

Livestock Research Group Annual Meeting

10 October 2025, Nairobi, Kenya

FAO GLEAM: updates on the ongoing developments and activities

Lydia Lanzoni & GLEAM Team

*Animal Production and Health Division,
Food and Agriculture Organization of the United Nations (FAO)*



Global Livestock Environmental Assessment Model (GLEAM)



Next generation of GLEAM

GLEAM-X

**Global baseline
assessment**

**Mitigation
calculator**

**Mitigation
scenarios**



**Web
application**



Open data



**Transparency
of methods**



**Application at
different
scales**



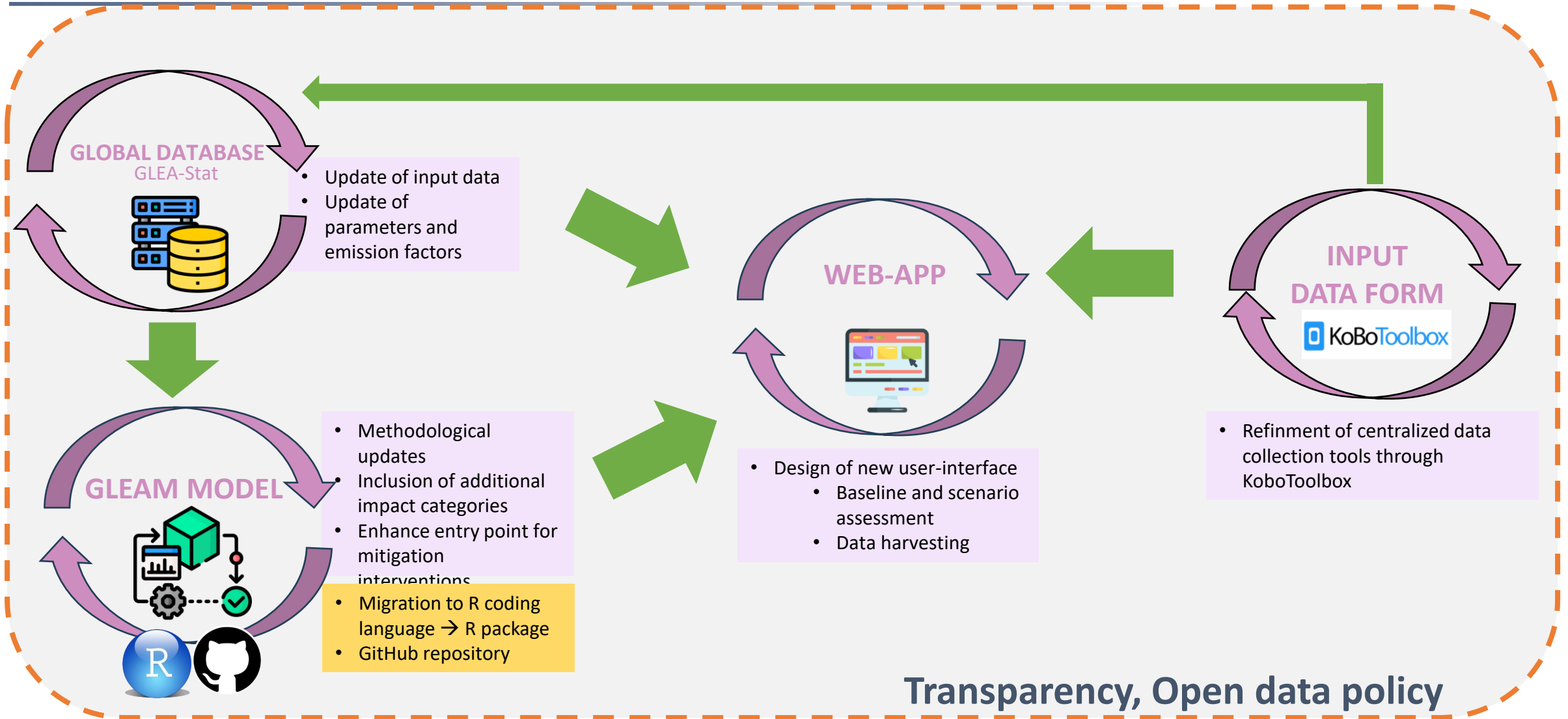
**Tradeoffs and
synergies with
other SDGs**

3 years (April 2024 – May 2027)

Funded by



GLEAM ongoing developments



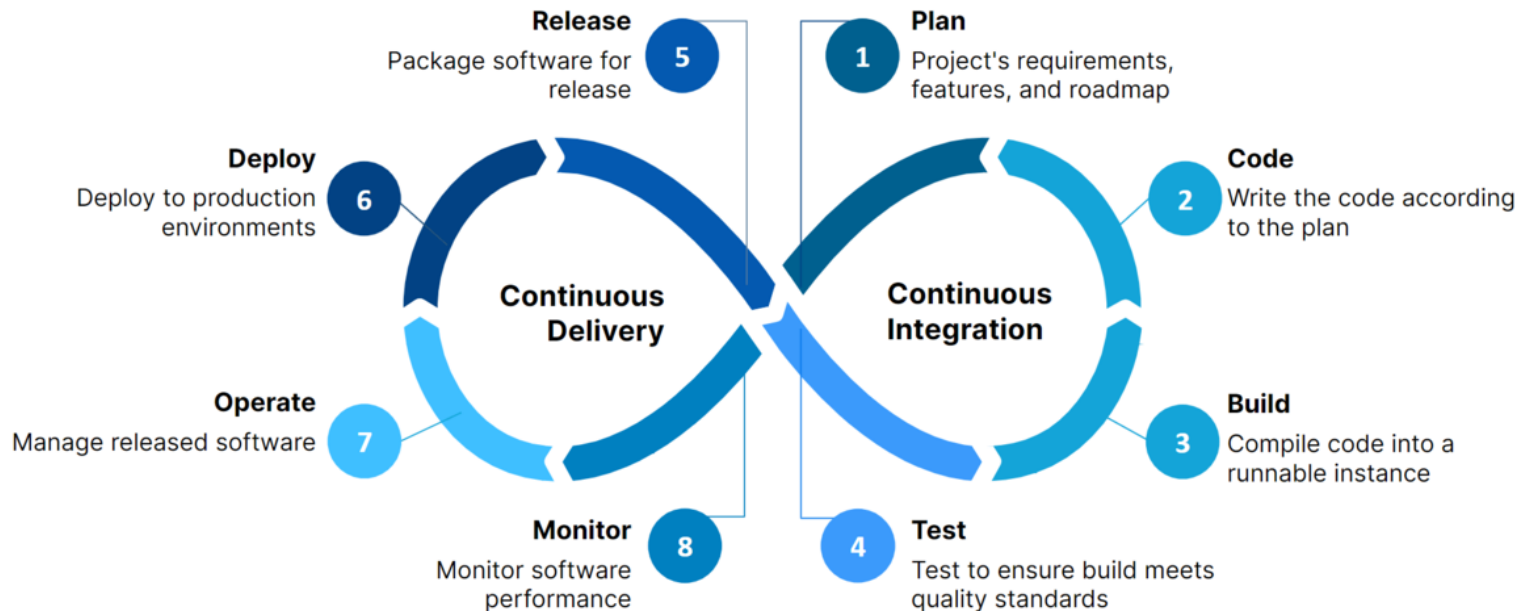
GLEAM ongoing developments: code management



Code in R environment + Shiny Integration (shared in GitHub)

- ❑ R + Shiny → accessible to the whole GLEAM team
- ❑ Shared GitHub repository → version control, history, safe collaboration

Outcome: updates become faster, transparent, and collaborative + improvements reach users quickly



GLEAM ongoing developments: R package

When using separate scripts

Hard to share

Need to copy/paste files across machines

Confusing to use

No clear entry point, each script can look different

Extra coding for integration

Connecting scripts into workflows takes time

Limited credibility

Scripts don't pass external checks or community review



When using an R package

Easily shared

one folder, installable anywhere, open-source easy contribution

Clear interface

Functions with defined roles and help pages

Plug-and-play

Works directly in pipelines, dashboards, or apps

Recognized standard

CRAN checks, visibility, and contributions

GLEAM ongoing developments: R package



**Single source of
truth**



**Reproducible
results**



**Clear, modular
functions**



**Built-in
documentation**



Automated testing

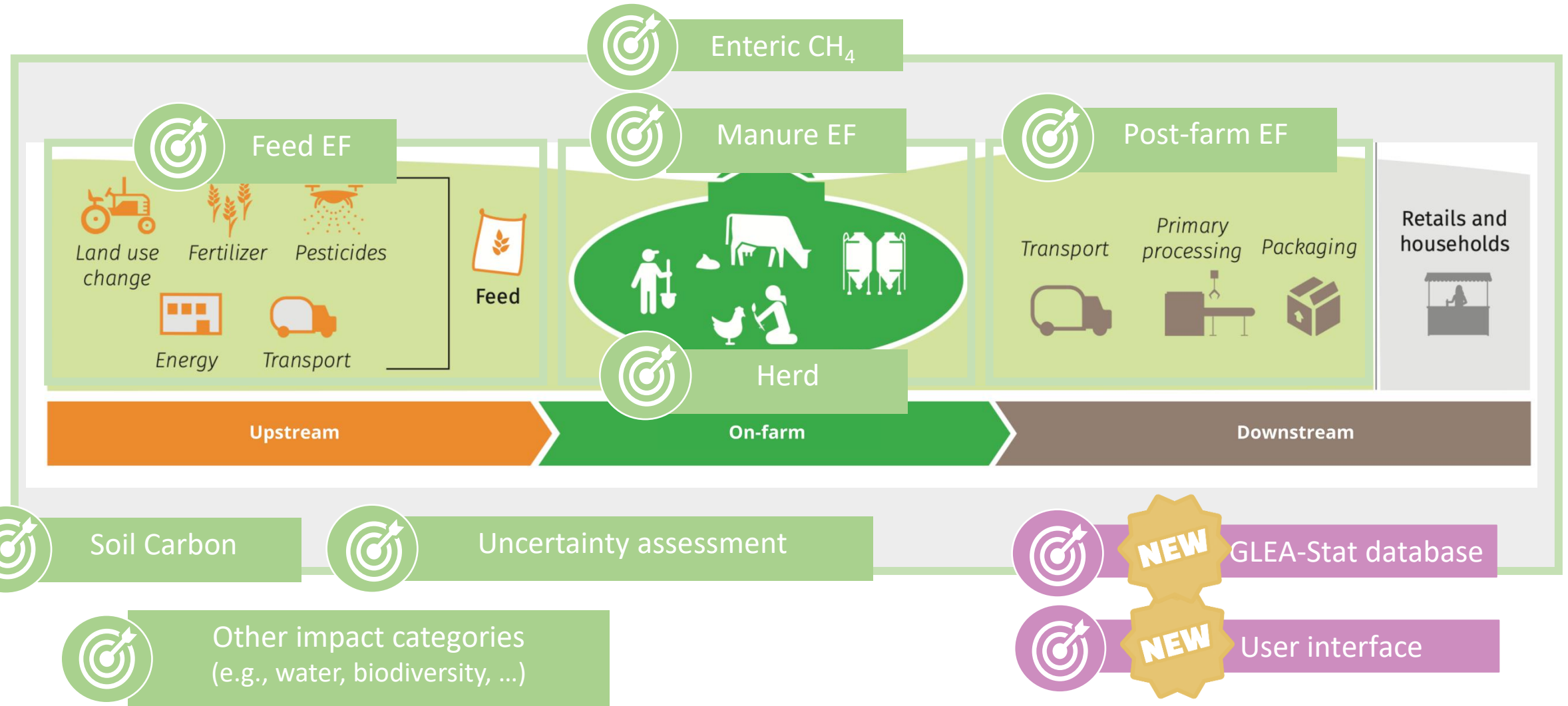


**CRAN credibility
& visibility**



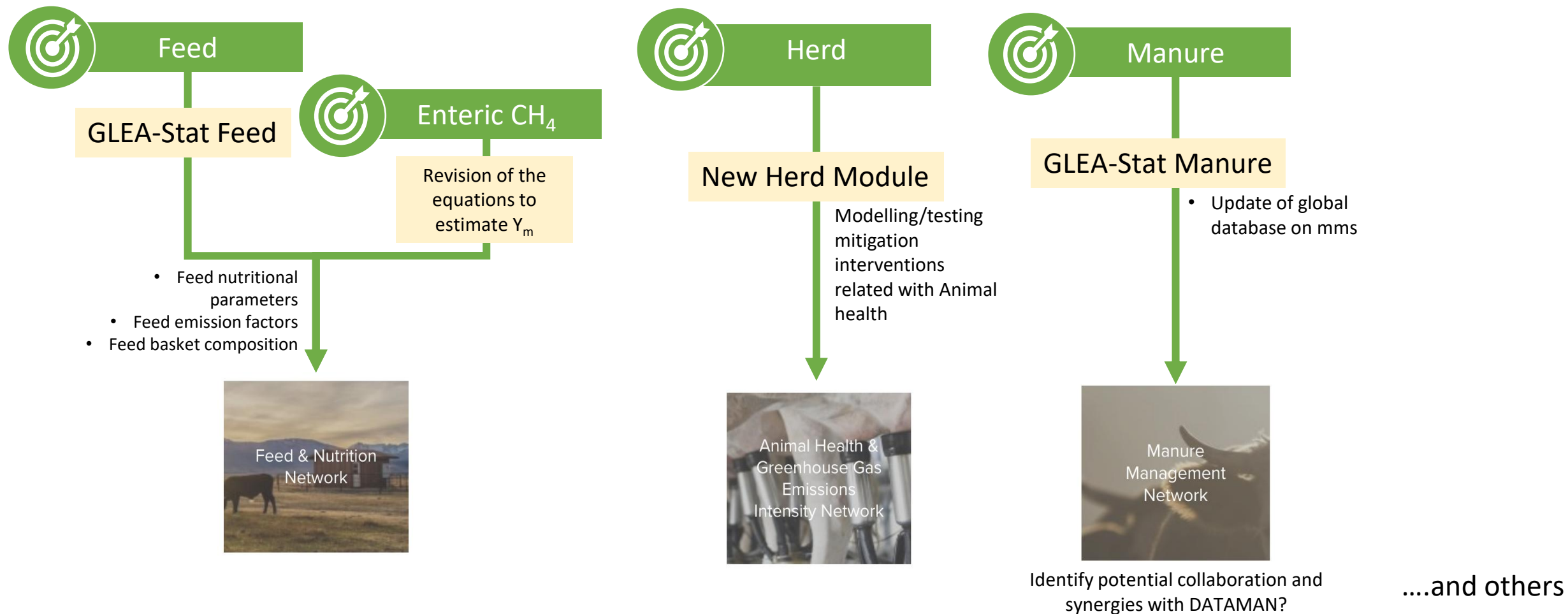
**Ready for
integration**

GLEAM ongoing developments: technical updates



FAOGLEAM – LRG Networks: opportunity for collaborations

2 LRG members in GLEAM-X Technical Advisory Board:
Nick Wheelhouse (AHN) & Andre Bannink (FNN)





Food and Agriculture
Organization of the
United Nations



Thank you!

info-GLEAM@fao.org