Where's the beef?

Optimising for biodiversity in a beef distribution model

THE UNIVERSITY OF QUEENSLAND
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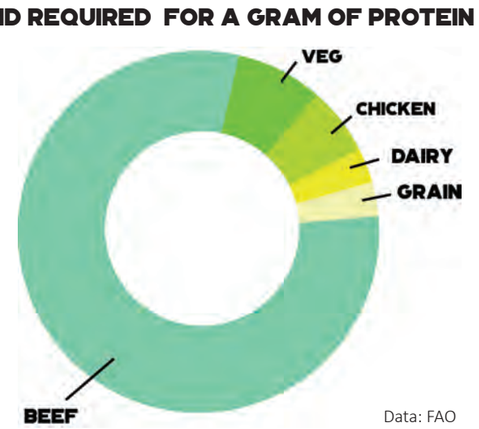
Introduction

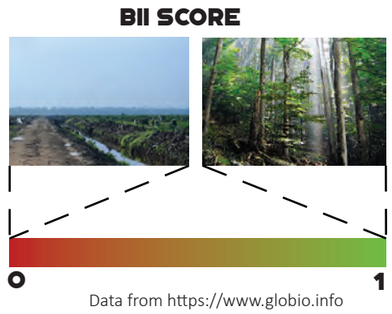
- Global demand for beef is growing rapidly
- Cattle production is one of the leading drivers of and cover change contributing to the current biodiversity crisis
- How do we meet beef demand while minimising the impact on biodiversity?



Data: FAO

Methods

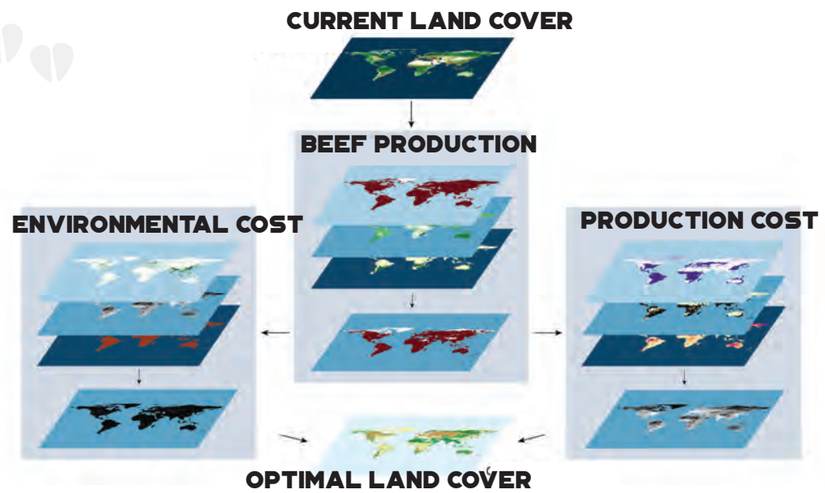
- Global spatial optimization coupled to a beef distribution model & biodiversity metric
- The beef production model is a systems model that assesses land suitability to produce beef & determines production cost
- To quantify biodiversity, a measure of intactness (BII) linked to land cover is used



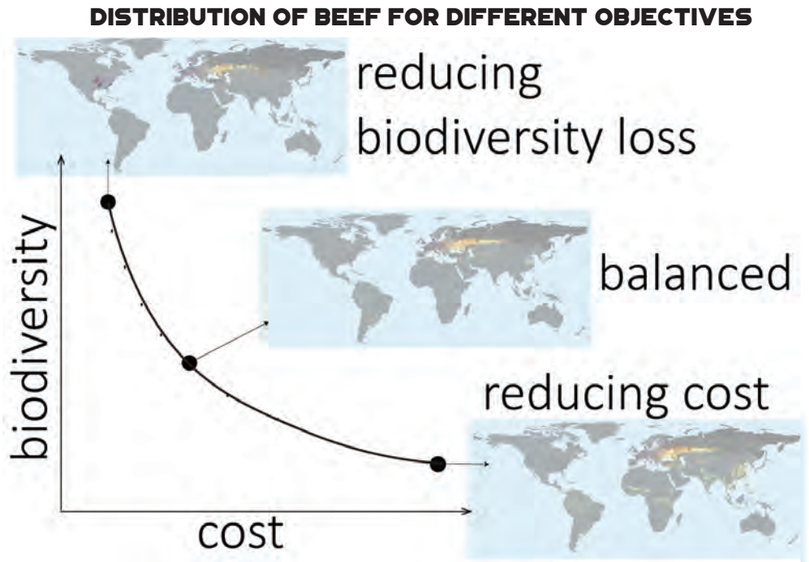
Data from https://www.globio.info

Modelling approach

- Per cell consider potential beef production, cost & biodiversity impact
- Optimisation gives trade-offs between environment & cost



Preliminary results



➔ major shift in where beef is produced globally depending on set priority

Conclusion

- We have included a spatially explicit measure of biodiversity as an objective in an optimisation of livestock distribution.
- The distribution of beef production varies depending on chosen priority of cost or biodiversty.

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