

# Reproductive performance of cattle in sub-Saharan Africa

## -a systematic map

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Introduction

Optimizing cattle reproductive performance is crucial to achieve sustainable development. In high-income countries, there is reasonable agreement about optimum reproduction. In lower- and middle-income countries, however, wide variation in production systems and environment mean that optimal reproductive performance is complex. We systematically mapped research published in eight African countries (Fig 1).

Material & Methods

We searched literature in Web of Science, Scopus, Google Scholar, Pubmed, Research4life, CABdirect, The Networked Digital Library of Theses and Dissertations, and CGspace.

We excluded articles published before 2012, reporting trials or literature reviews, and those not written in English.



Material & Methods

We extracted results either directly from the database, scraped them from the website using Octoparse, or extracted them using Publish or Perish. Information was then extracted from articles regarding study design, study population and reproductive performance of female cattle. This systematic mapping project was managed using CADIMA.

Results & Discussion



Fig 1) No. publications per country

Cattle reproductive performance has been studied in a good number of publications in Ethiopia and Kenya, but few in the other six countries. However, there could be a body of local knowledge that was not included in our map because it was not reported in any of the literature databases, was not reported in English or because our search algorithm missed the publication.

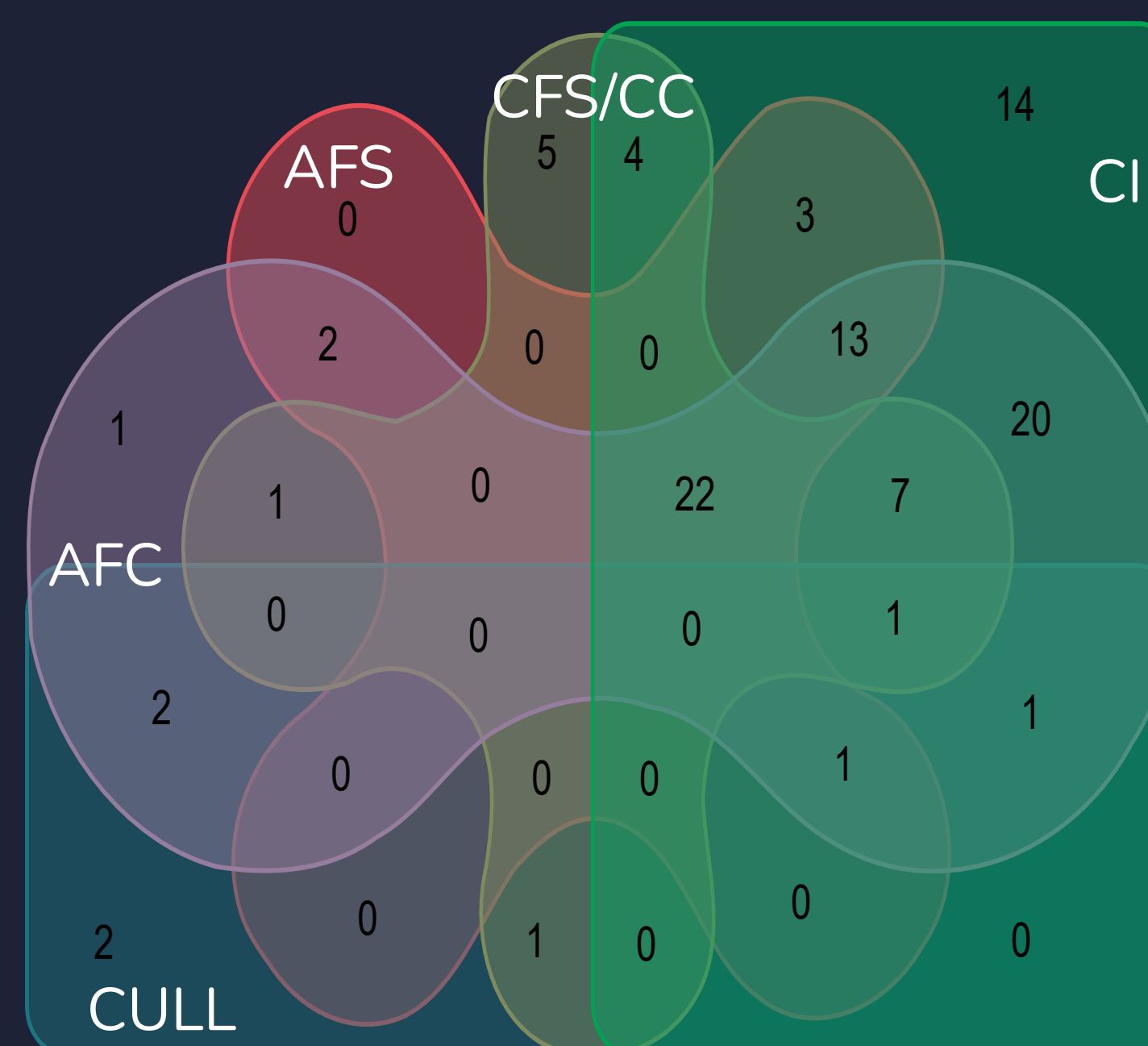


Fig 2) Venn diagram of fertility parameters in each publication

The parameters reported were predominantly age at first calving (AFC: 41%), and calving interval (CI: 51%). Only 10% of the studies reported specifically on results from artificial insemination and only 9% on the percentage of culling due to infertility. This gap in complete information on reproductive performance complicates interpretation.

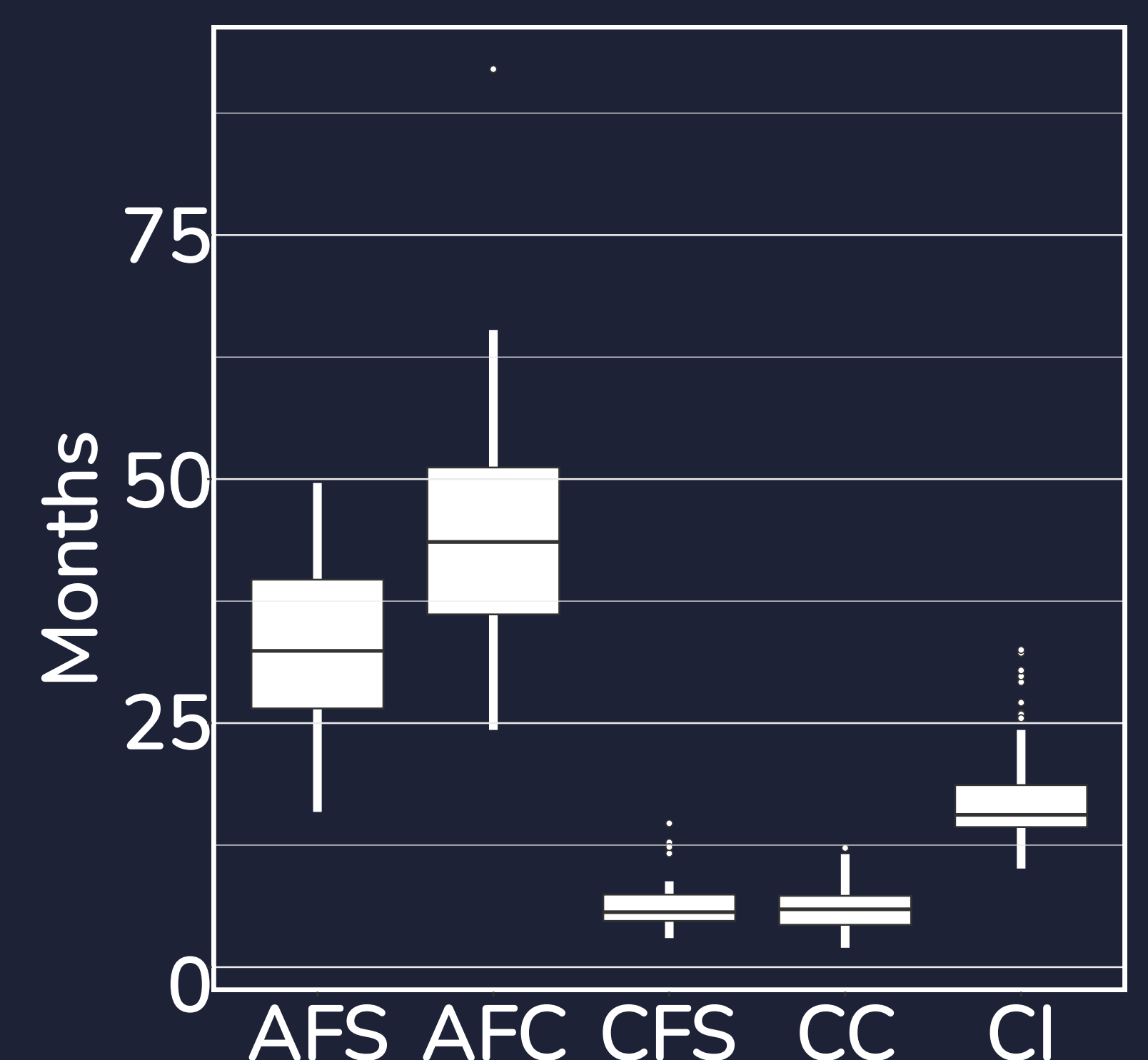


Fig 3) Summary of fertility parameters

As expected, there was great variation in the reported parameters: mean age at first calving (AFC) was reported between 24 and 92 months (median 44); and calving interval (CI) between 10 and 33 months (median 16). Reasons for the variations are not clear from the studies; however, the variability shows that good reproductive performance is achievable.

Results & Discussion



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