A global review of approaches to animal health priority setting and resource allocation, 2000-2021: a structured, systematic scoping review

Kebede Amenu[1,2], **K. Marie McIntyre**[3], Nebyou Moje[4], Theodore Knight-Jones[2], Jonathan Rushton[3], Delia Grace[5,6]

[1]Addis Ababa University, Ethiopia; [2] International Livestock Research Institute (ILRI), Addis Ababa, Ethiopia; [3]University of Liverpool, UK; [4] Hawassa University, Ethiopia; [5]Natural Resources Institute, University of Greenwich, UK; [6] ILRI, Kenya

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Key findings

✓ Identified disease prioritisations were based on economic analysis, multi-criteria evaluation, risk assessment, simple ranking, spatial risk mapping, and (simulation) modelling

✓ Various reasons for disease prioritisation

✓ Of disease prioritisation studies and assessments, 50.5% had a national focus

✓ Improved animal health and disease prioritisation techniques are needed to better guide decision-making and resource allocation

Objectives

- This scoping review aimed to identify the types of studies available in the literature describing animal health decision making, priority settings and resource allocation with a goal to develop better prioritisation frameworks for decision making around animal health activities

Study background

- Many animal diseases affect the production and productivity of animals, and disease management resources are limited, necessitating investment choices

- In contrast to human diseases, there is no evidence-based, consensus, prioritisation of animal diseases
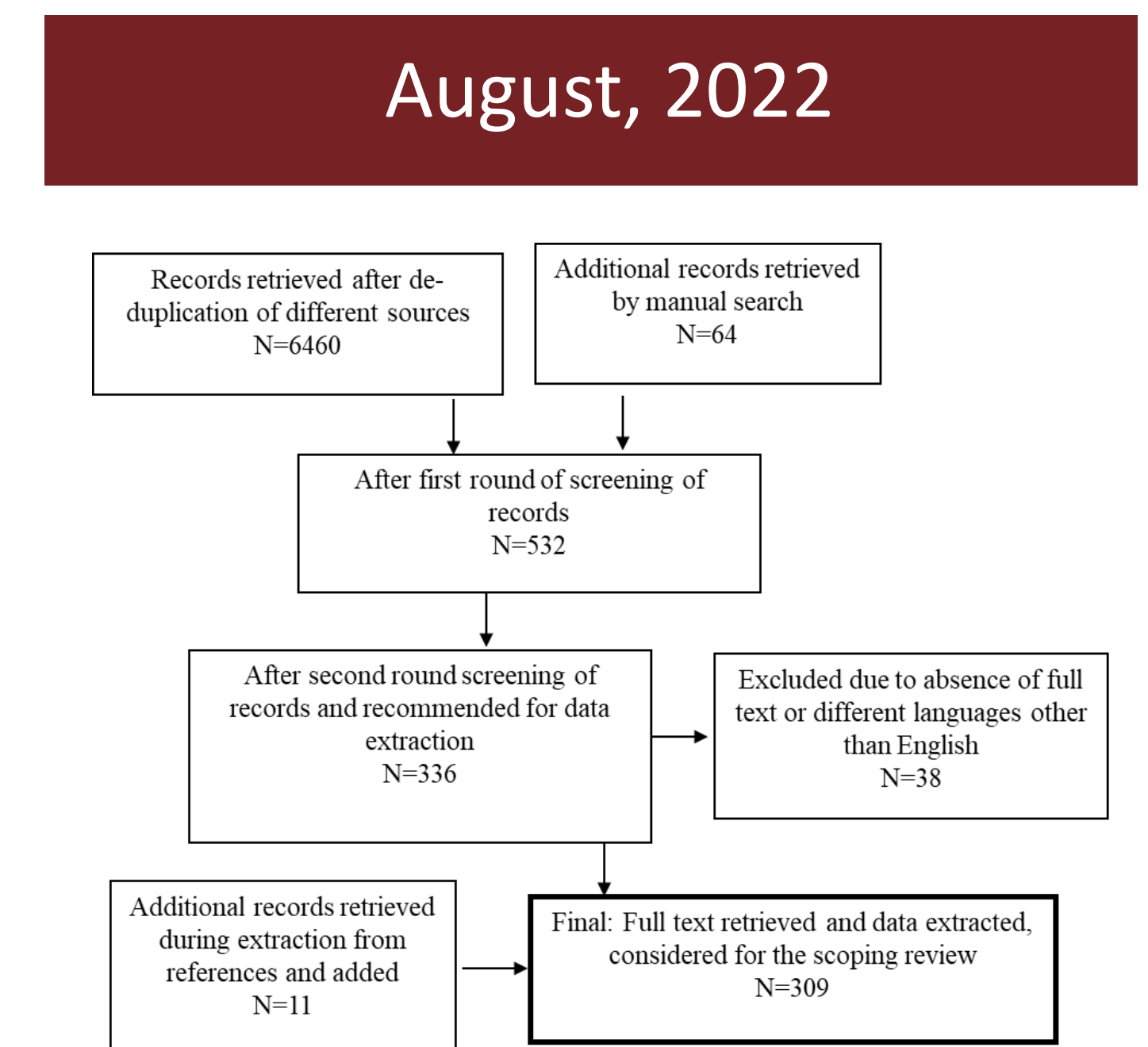
Methods

- 2020 Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA-SLR) extension for Scoping Reviews

- Literature published from 1st January 2000 to August 13, 2021 was retrieved from three electronic databases (Medline/PubMed, Embase and CAB Abstracts) using syntax with inclusion and exclusion criteria

- Literature screening and extraction undertaken in sequence (first and second screening, then data extraction) using Svsrev.com

Conclusions

Animal disease prioritisation initiatives vary widely in approach, objectives, and in priority diseases identified. Identified priorities are often not well-supported by evidence or consistent with other prioritisations. Better disease prioritisations can serve multiple objectives.

Results

- After two screening steps, 309 articles were selected and data were extracted

  ➢ Diseases and animal health issues were prioritised to help decision making in risk management or resource allocation

- Distribution of publications by year (2000-2021) disaggregated by prioritisation method
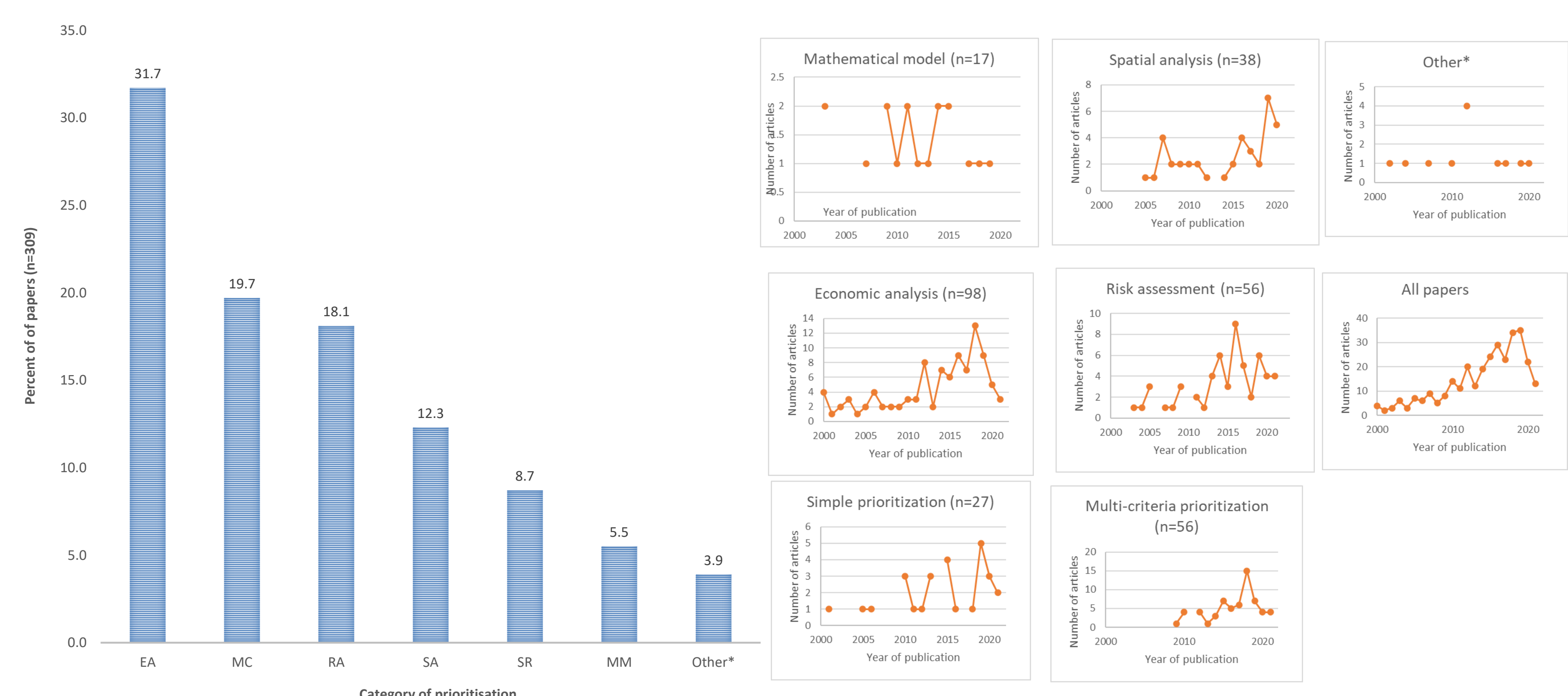
MM: Mathematical modelling; EA: Economic Analysis; MC: Multi-criteria prioritisation; SA: Spatial Analysis; Risk Analysis; SR: Simple ranking), other*(Decision tree, H-index, and combinations of different methods)

- Number (%) of papers disaggregated by geographical range

Categories	All		MM		EA		MC		SA		RA		SR	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Local	38	12.3	0	0.0	17	17.3	4	6.6	3	5.4	8	29.6	6	15.8
Sub-national	20	6.5	0	0.0	5	5.1	4	6.6	2	3.6	3	11.1	5	13.2
National	156	50.5	7	41.2	45	45.9	35	57.4	35	62.5	11	40.7	19	50.0
Regional	36	11.7	1	5.9	7	7.1	11	18.0	11	19.6	2	7.4	3	7.9
Global	12	3.9	1	5.9	2	2.0	2	3.3	0	0.0	3	11.1	3	7.9
No geographical range	47	15.2	8	47.1	22	22.4	5	8.2	5	8.9	0	0.0	2	5.3

- The purposes or intentions of the disease or animal health prioritisation (n=309 studies)

Purposes of prioritisation	n	%
Disease control, prevention or eradication strategies	122	39.5
Identification of the priority of diseases to inform general organisational strategy	71	23.0
Assessment of risk of disease introduction or occurrence	49	15.9
Identification of high-risk areas or populations	34	11.0
Disease surveillance	22	7.1
Research priority setting	7	2.3

Study limitation
The present study covered only published literature. However, all disease prioritisation or decision making methods may not be published which can be cited as a limitation.

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