



The role of the social sciences in preventing and responding to zoonotic disease outbreaks

Beshir Ali, Thanicha Chanchaidechachai, Simon Rüegg, Henk Hogeveen, and Bart van den Borne

Background

- Integration of social science expertise is required to prevent and mitigate zoonotic diseases through adaptive interventions, e.g., by understanding and modifying human behavior.
- Adaptive interventions are currently underutilized in zoonotic disease management compared to technical interventions.
- There are no review studies that synthesized and provide an overview of the integration of social sciences in zoonotic disease management.

Objective

- Mapping the existing knowledge on the contribution of social science in zoonotic disease management: what and how does it contribute?
- Exploring the role of social science expertise in understanding zoonotic disease drivers; designing effective prevention & mitigation strategies; understanding factors influencing uptake & effectiveness of disease management strategies; and evaluating zoonotic disease responses as well as impacts.

Methods

- We conducted a scoping review following PRISMA-ScR guidelines.
- We analyzed 686 articles from Scopus, Web-of-Science & CAB Abstracts.
- Studies were analyzed in relation to zoonotic disease drivers, management & outcomes (Fig 1).

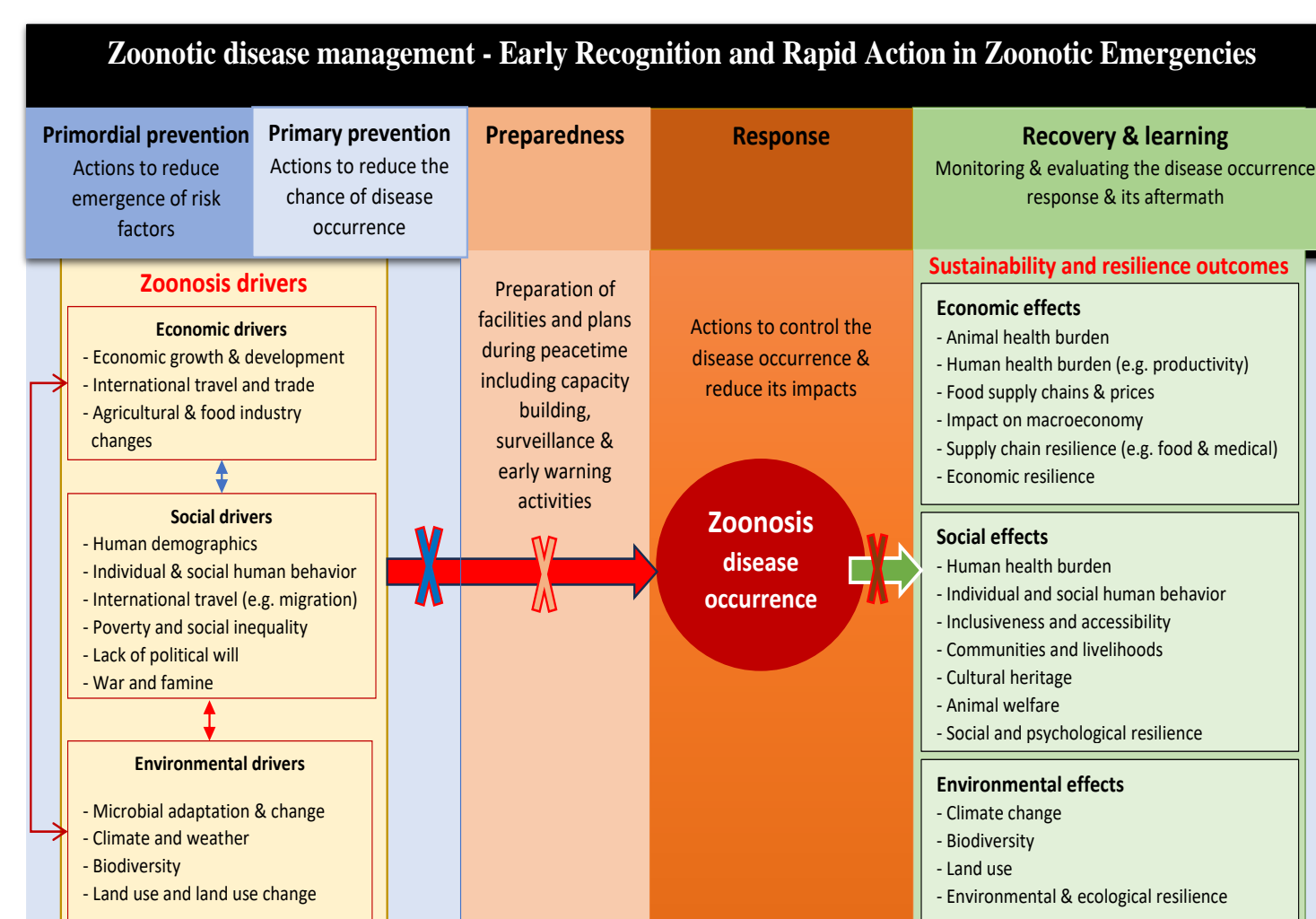


Fig 1. Conceptual framework

Results

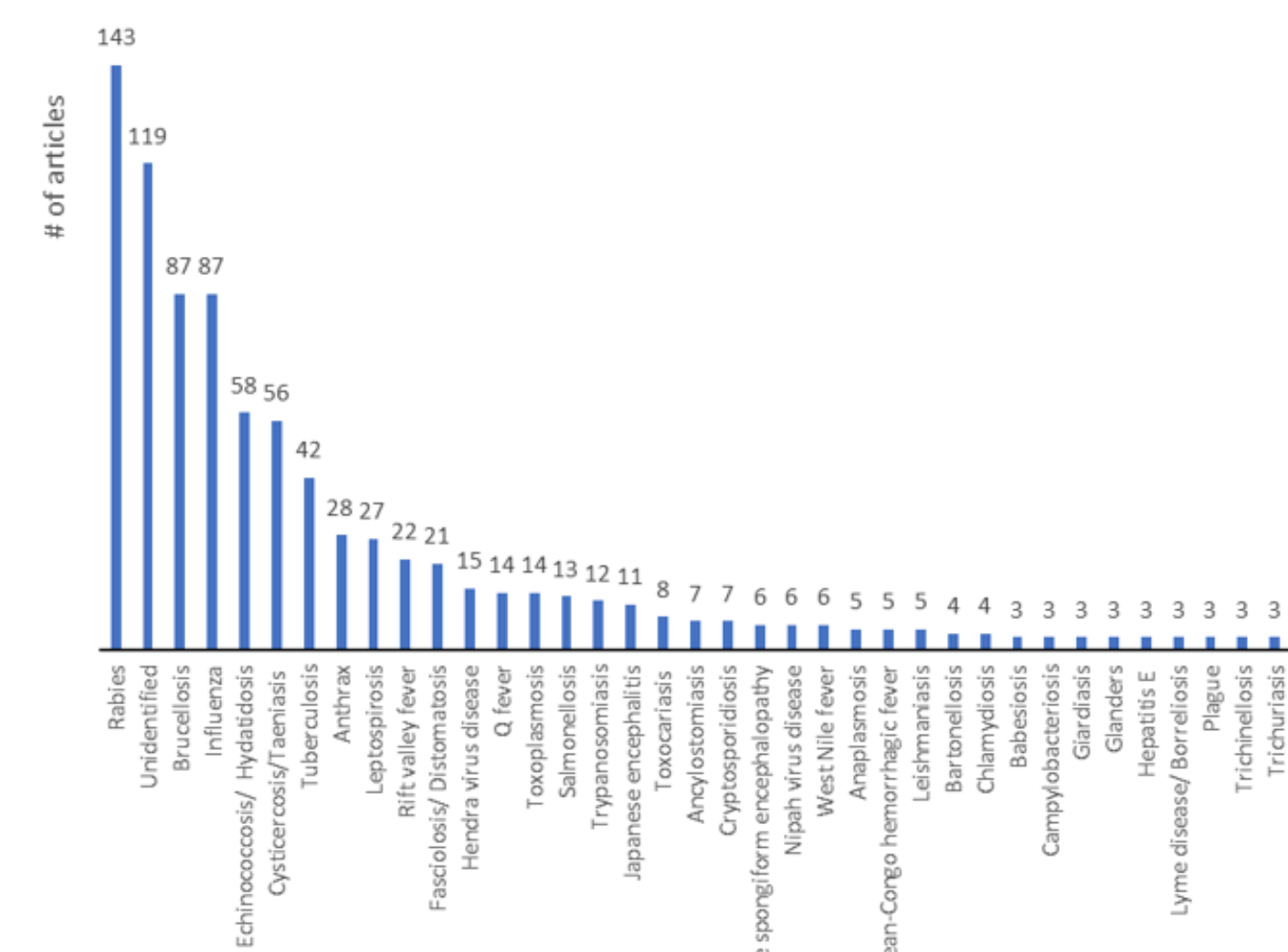


Fig 2. Number of retrieved articles by the type of zoonotic disease studied.

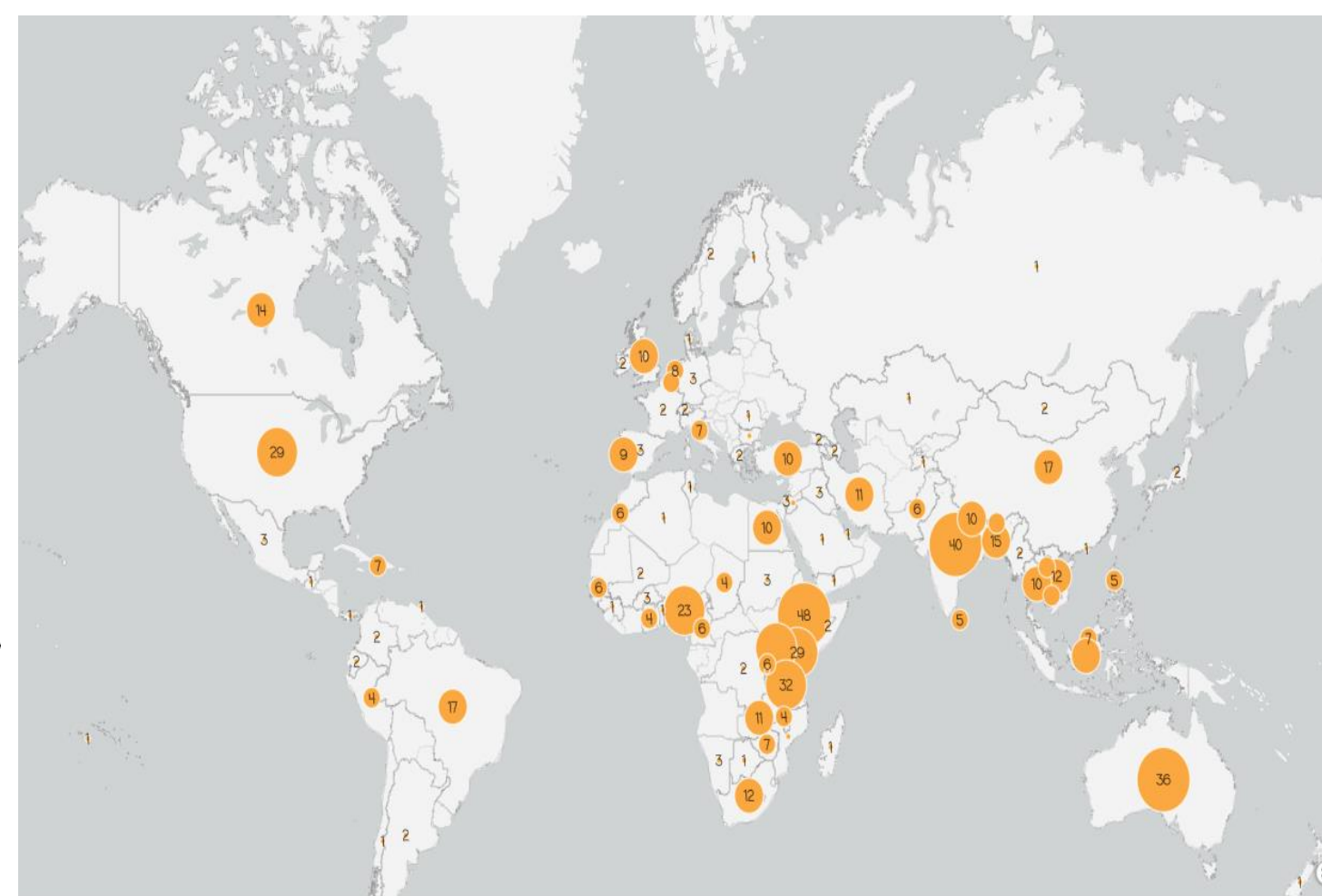


Fig 3. Summary of the geographical focus of the retrieved studies (N = 686)

- Most studies were from Ethiopia (rabies, echinococcosis), India (rabies, brucellosis, cysticercosis), Tanzania (rabies, brucellosis), Kenya (Rift Valley fever), Australia (Hendra virus diseases, Q fever) and USA (influenza, salmonellosis; Fig 2 and 3)

Results

- Very few articles in social science discipline journals (10/686)
- Literature focuses mainly on assessment of knowledge, attitude, and practices (KAP) and risk perceptions (Fig 4).
- Most economic impact assessment studies performed simple cost estimation for evaluating disease burdens (Fig 4).

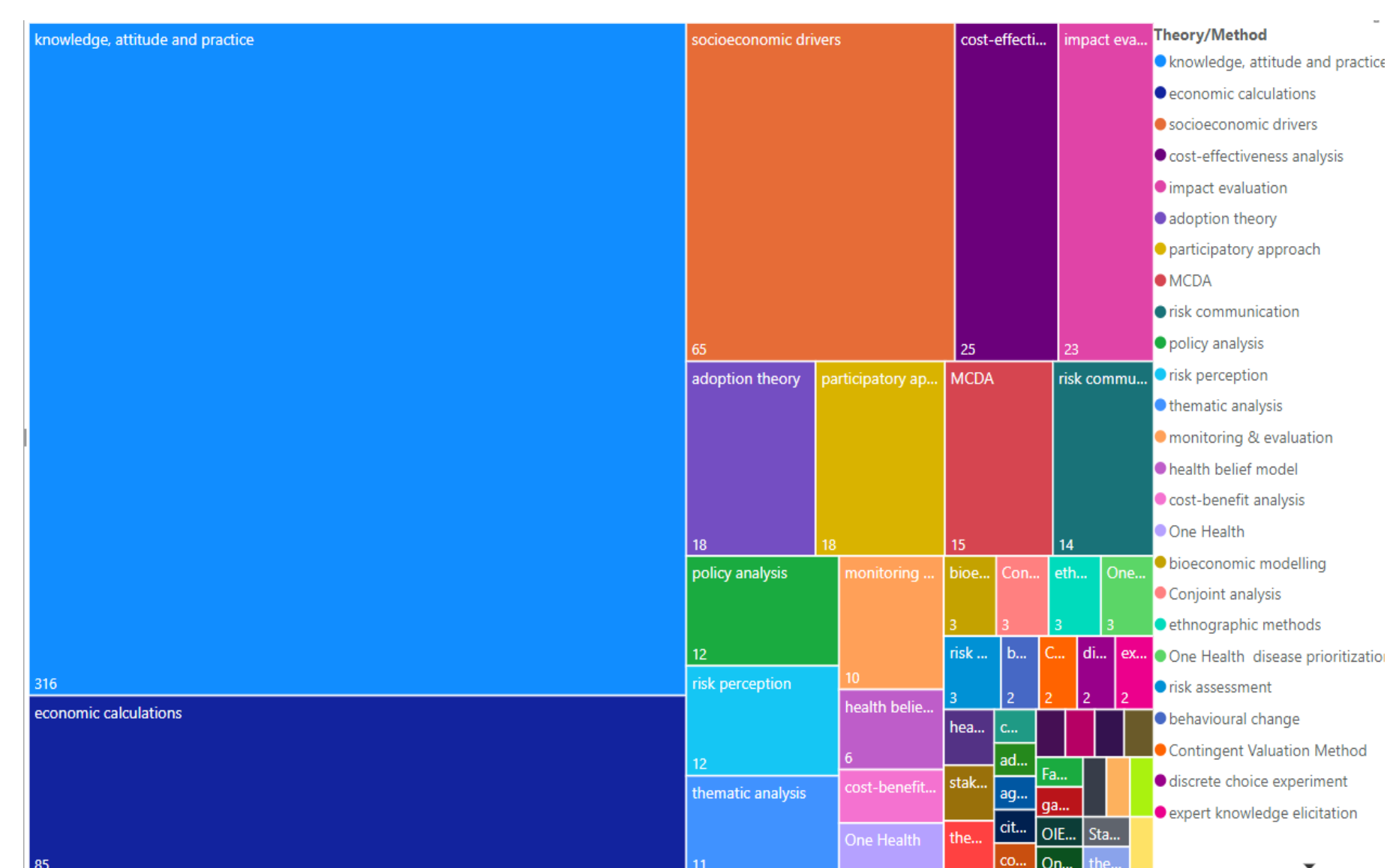


Fig 4. Summary of social science theory/method applied by retrieved articles.

How have social sciences been contributing to zoonotic disease management?

- ❖ **Primordial prevention** - understanding stakeholders' KAPs, and economic (e.g. trade), social (e.g. festivities) and environmental (e.g. deforestation) risk factors.
- ❖ **Primary prevention** – designing and evaluating preventive strategies and insight into socioeconomic and behavioral factors influencing uptake and effectiveness of preventive measures.
- ❖ **Preparedness** - prioritization of zoonotic diseases, and design and evaluation of disease surveillance systems.
- ❖ **Response** - understanding stakeholders' KAPs towards control strategies, evaluating control strategies, and insight into socioeconomic & behavioral factors influencing uptake of control strategies.
- ❖ **Recovery & learning** – evaluating risk communication and media coverages during epidemics, experiences of 'One Health' adopting countries, and reviewing lessons from past outbreaks.

Conclusions

- Lack of rigorous social science studies (other than cost calculation and reporting of KAPs)
- Focus of literature does not reflect global livestock distribution
- Lack of 'real' social impact analyses, other than human health burden
- A systemic approach should be followed to understand the system wide socio-economic & behavioral drivers, and impacts of zoonotic disease outbreaks

Acknowledgements

This project was funded by ERRAZE@WUR, a research and investment programme by Wageningen University & Research.



Bart van den Borne
Lecturer, Business Economics Group
Wageningen University & Research
Contact: bart.vandenborne@wur.nl
T +31 (0)6 18 41 02 08

