



The Economics of Ecosystems and Biodiversity TEEB for Agriculture & Food Global Symposium, February 2019

Traditional livestock systems in Tanzania

27 February 2019, Nairobi

Pietro Galgani - True Price/Impact Institute

Traditional livestock systems in Tanzania - An Application of the TEEB AgFood Framework (2019). W. Baltussen, S. van Berkum, Y. Dijkxhoorn, R. Helmes, S. Ozkan-Gulzari, G.D. Massawe, P. Galgani, F. v.d. Elzen and T. Smith



Supported by:



The Economics of Ecosystems & Biodiversity

based on a decision of the German Bundestag

Image credit: Anup Deodar

teebweb.org

Content

- Study setup
- Some findings
- Lessons learnt

Study setup

Objective

- Use the TEEB AgriFood Framework to assess traditional livestock systems in Tanzania
 1. Systems as they are today
 2. Technical improvements
 3. Livestock policy

Scope: focus on three systems as they are now and potential technical improvements

Smallholder dairy in the Southern Highlands

97% of national milk supply



Backyard poultry in rural Tanzania

70% of rural supply, 20% of urban supply

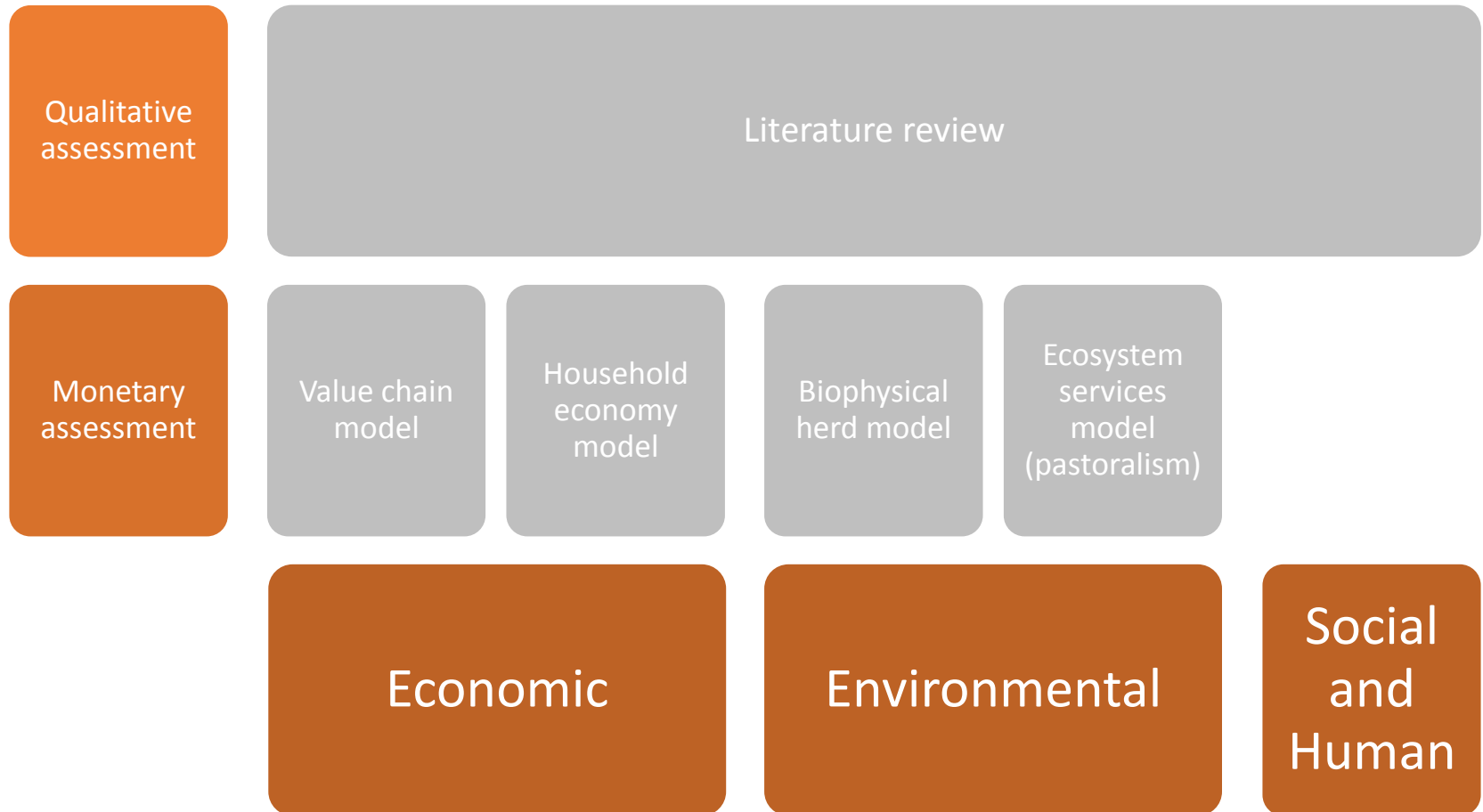


Pastoralist livestock systems Maasai steppe

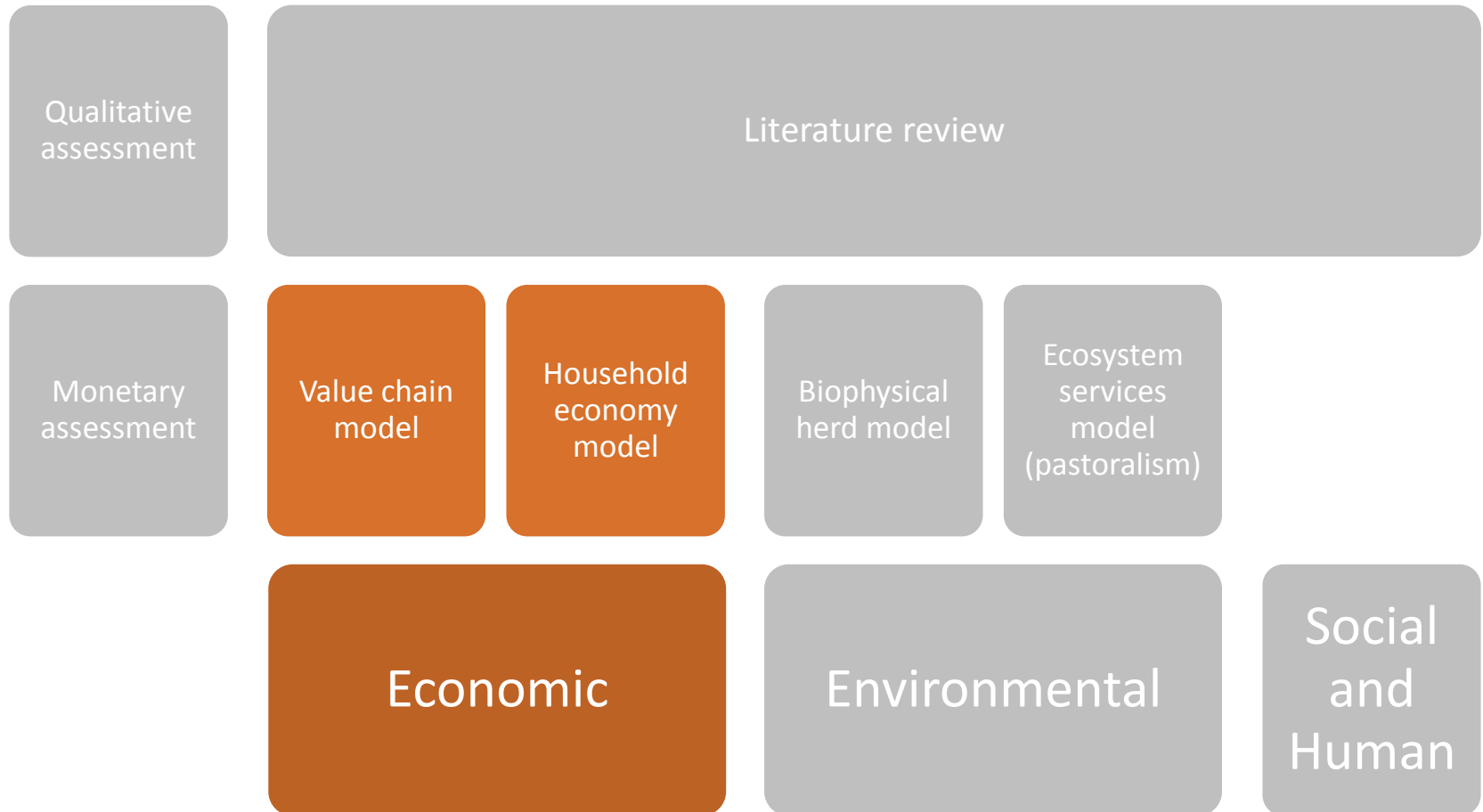
90% of country's cattle herds



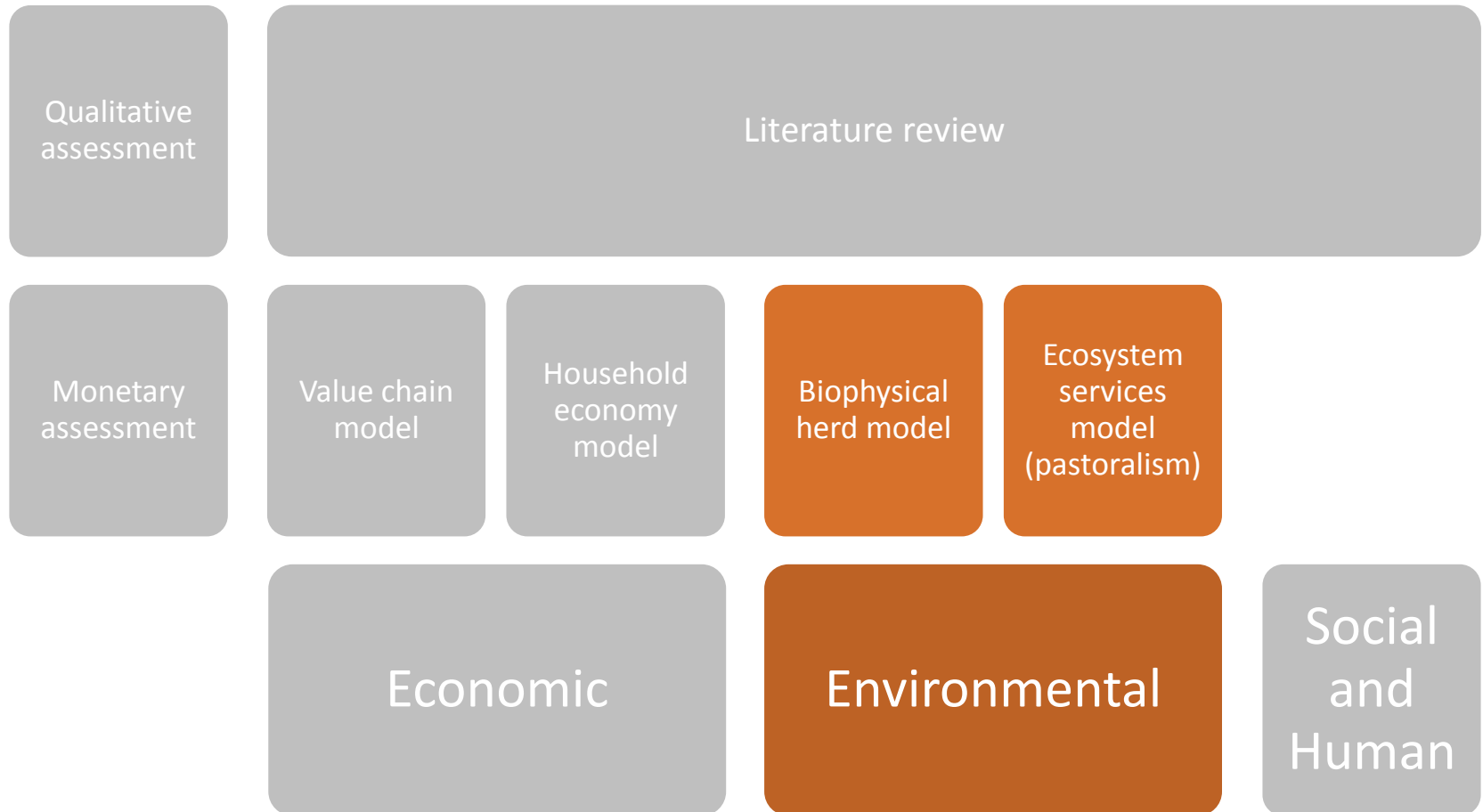
Methods



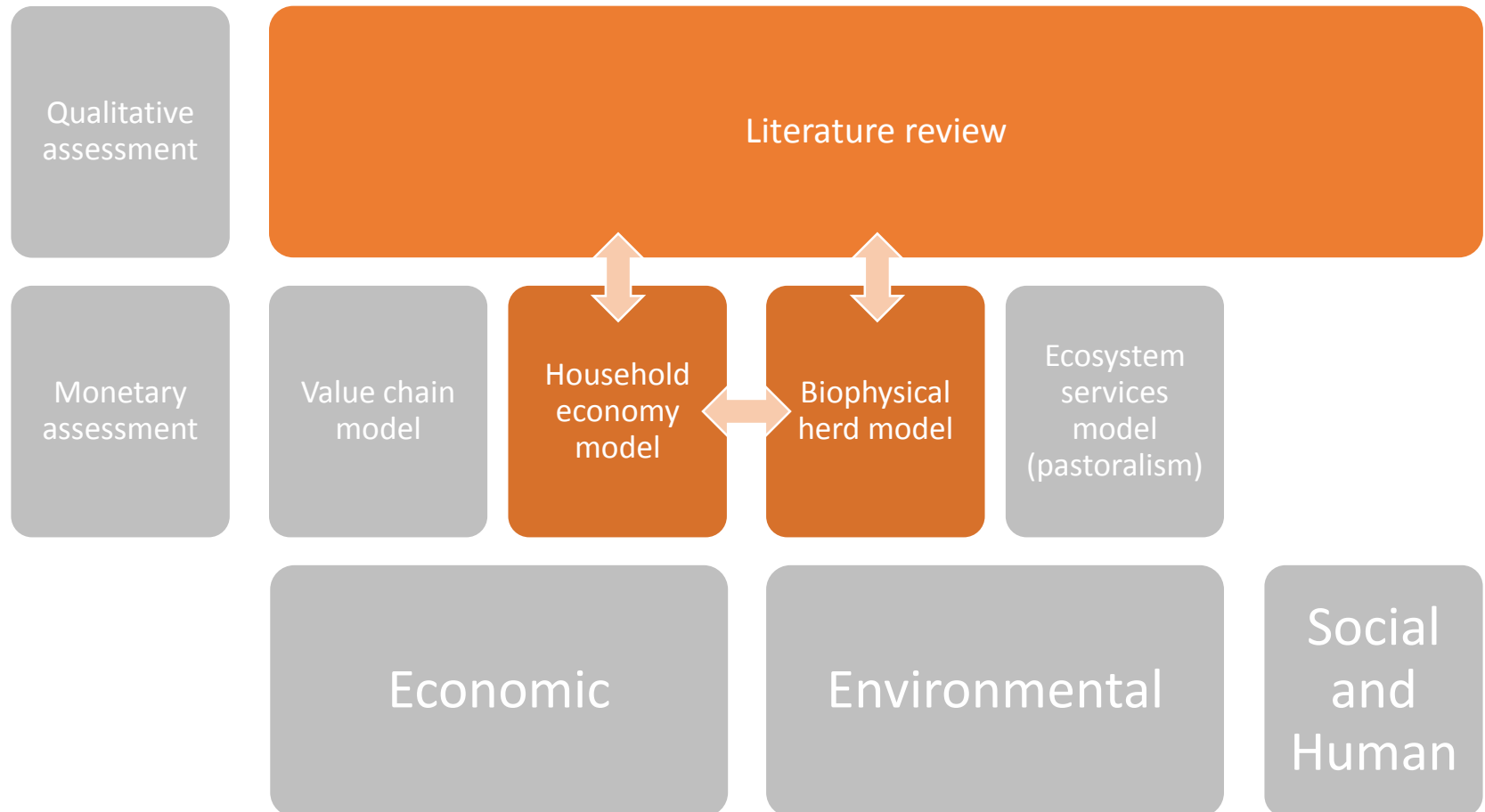
Economic modelling



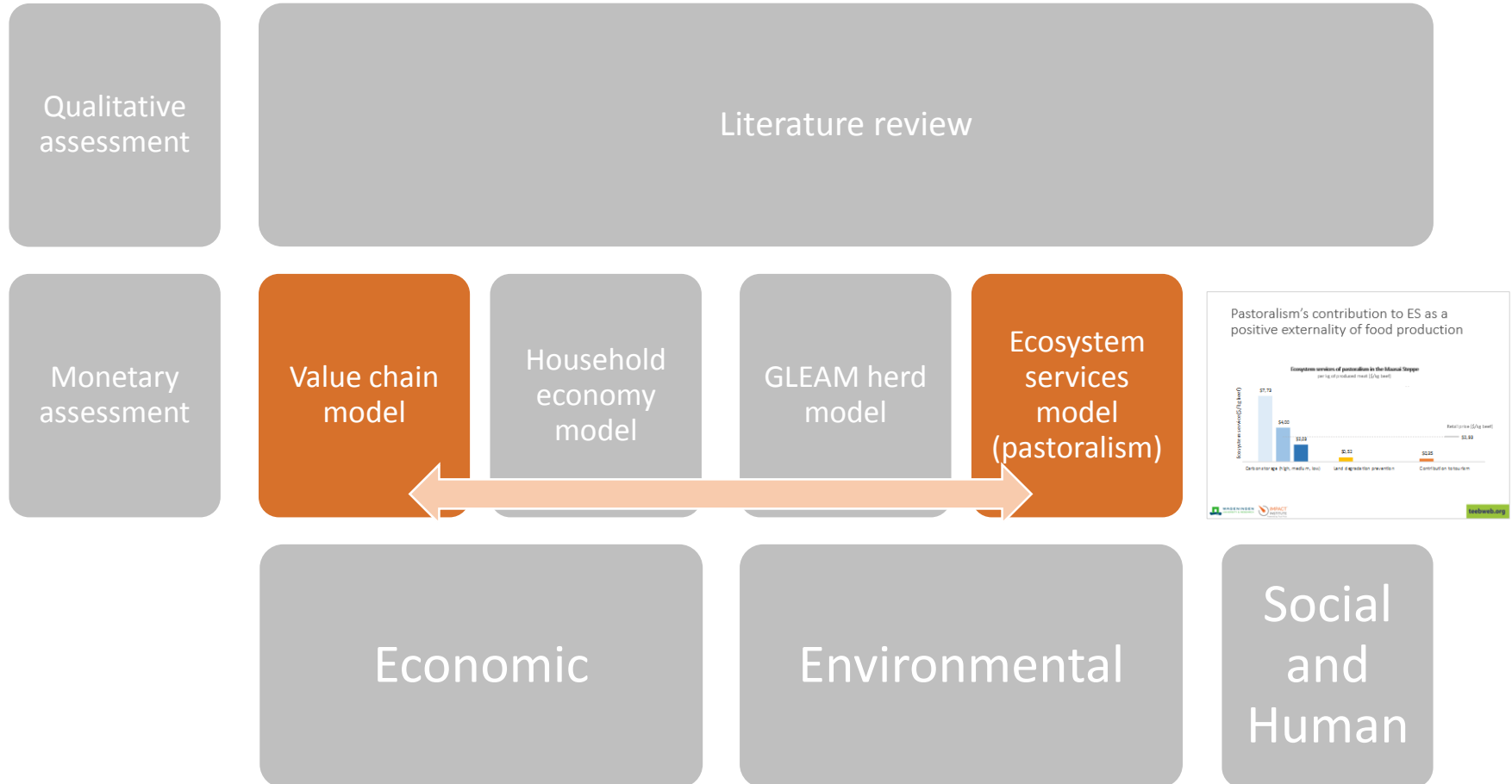
Environmental modelling



Assessment of technical improvement based on literature, economic and biophysical herd models



Ecosystem services model brings natural capital valuation in value chain perspective







Pastoralism's contribution to ES as a positive externality of food production

Ecosystem services of pastoralism in the Maasai Steppe
per kg of produced meat (\$/kg beef)



Some findings

Key problems in the systems analysed are in produced capital but all link to others

	 PRODUCED CAPITAL	 NATURAL CAPITAL	 HUMAN CAPITAL	 SOCIAL CAPITAL
Low productivity Low access to inputs and insufficient income	✓		✓	
Low animal health Low yields and potential impacts on human health	✓	✓	✓	
Little infrastructure Insufficient extension service, underdeveloped milk value chain	✓			✓
Relatively high impact on climate change External cost of GHG up to 3 times retail price		✓		
Pastoralism and development trends Expansion of sedentary farming, land tenure issues and low schooling rates	✓	✓	✓	✓

Benefits beyond food are identified across the four capitals

	 PRODUCED CAPITAL	 NATURAL CAPITAL	 HUMAN CAPITAL	 SOCIAL CAPITAL
Household income Income and savings value for poor households	✓		✓	
Use of agricultural and food waste Manure as an important reason to keep livestock	✓	✓		
Woman empowerment Backyard poultry is usually managed by women	✓		✓	✓
Short value chains = low natural capital impacts Land use and biodiversity, water pollution		✓		
Ecosystem services of pastoralism Carbon storage, land degradation prevention and a contribution to tourism		✓		✓

Lessons learnt

Lessons learnt in using the framework

Challenges

- Data
 - Too much & Too little
 - Too early?
- Synthesis
 - Mediate between perspectives (agronomist, sociologist, environmentalist...)
 - Framing the question
 - Messaging of results

Benefits

- Clear view on technical improvements
 - Win-win for climate & income in cattle systems
 - Forces you to identify side-effects
- Trade-offs and potential pitfalls of livestock development policy become visible
 - Risk of losing local benefits
 - Overuse of inputs
 - Overgrazing
 - Incentives: Short- vs long-term, local vs global
 - Institutional barriers to pastoralism development



The Economics of Ecosystems and Biodiversity TEEB for Agriculture & Food Global Symposium, February 2019

Thank you

Pietro Galgani - True Price/Impact Institute

Traditional livestock systems in Tanzania - An Application of the TEEB AgFood Framework (2019). W. Baltussen, S. van Berkum, Y. Dijkxhoorn, R. Helmes, S. Ozkan-Gulzari, G.D. Massawe, P. Galgani, F. v.d. Elzen and T. Smith



www.wur.nl www.trueprice.org
www.impactinstitute.com

Supported by:



The Economics of Ecosystems & Biodiversity

Image credit: Anup Deodar

teebweb.org