

THE IMPACT OF BEDDING MATERIALS ON POULTRY HEALTH: A ONE HEALTH APPROACH

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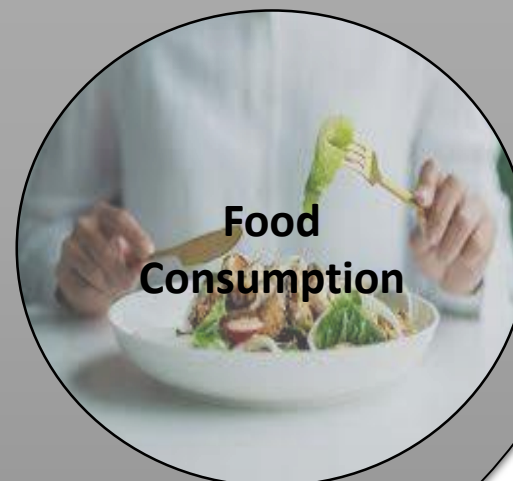
• **PhD:** Sustainability Science
(2022-Ongoing)

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CE3C
centre for ecology, evolution
and environmental changes

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Sustainability





Livestock production intensification



Machinery and external supplies

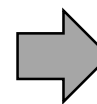


Agriculture specialization



Fast reproduction

Intensive growth

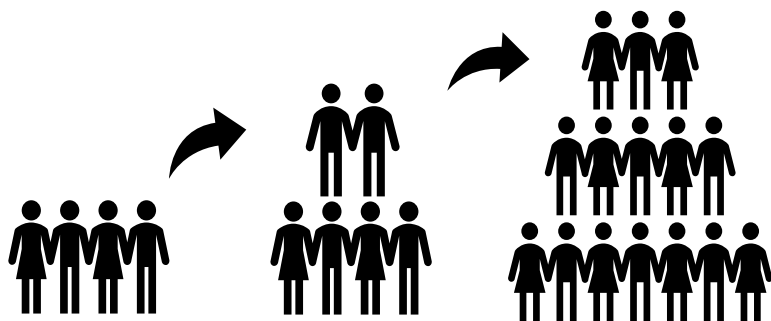


Cheap prices

High productivity

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THE FUTURE



“...Food demand is expected to increase between 59 and 98% by 2050 [1] ...”

Can we meet the expected demands?



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Not in a sustainable manner

Food consumption



Food production



Use of Natural resources



Availability of Natural resources





Pandemics



Climate change



Land degradation

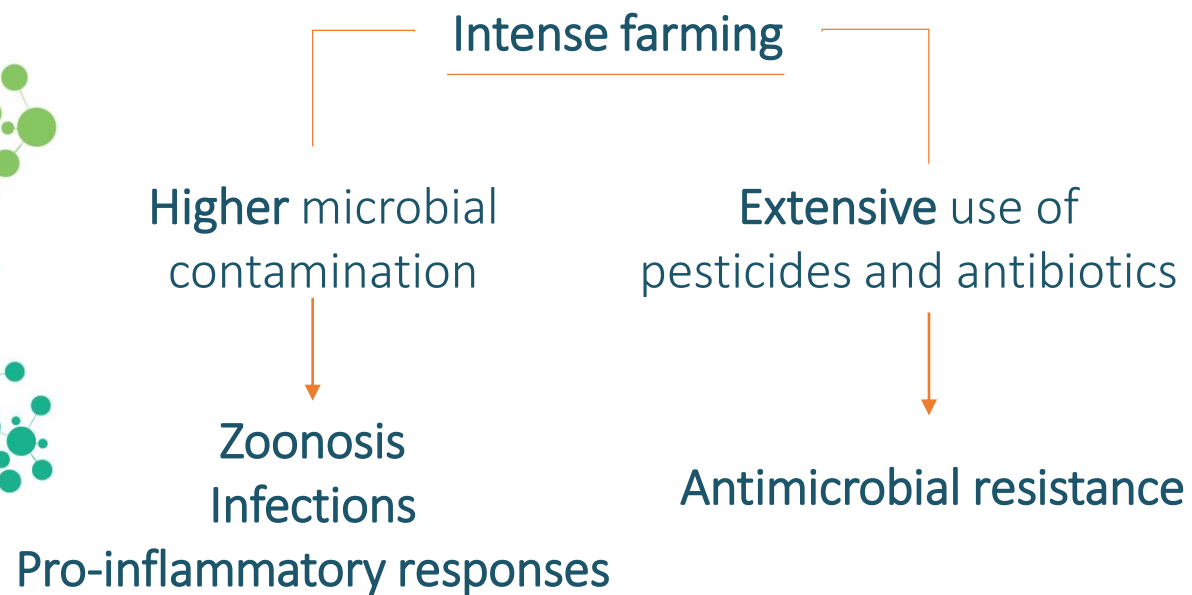


Biodiversity loss

“It is necessary to implement policies to favor the **transition** to sustainable systems [2].”

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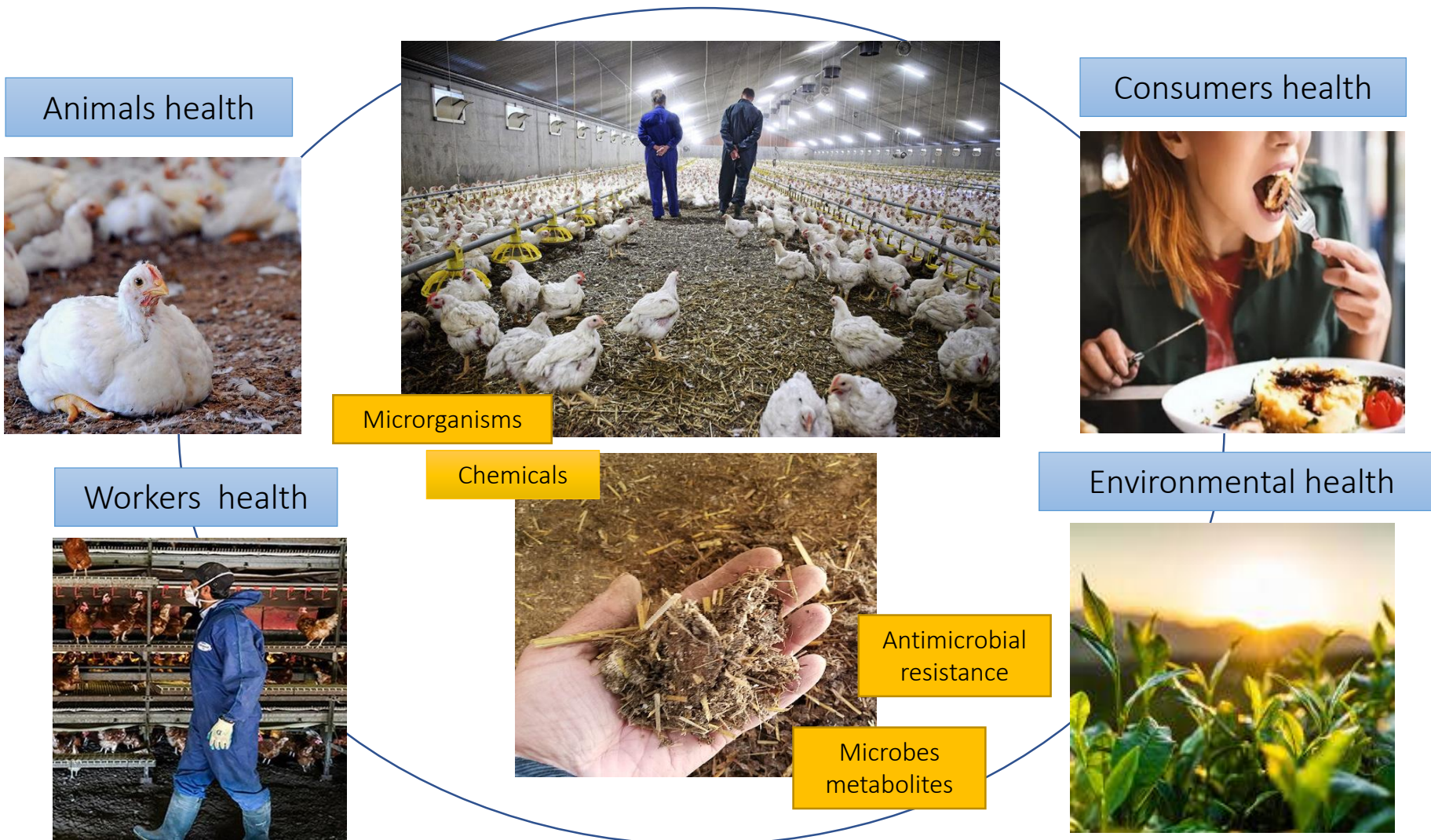
A CURRENT CONCERN : **THE POULTRY INDUSTRY**



According to the FAO, **animals bedding** is one of the potential **pollutants** affecting poultry production [3].

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THE SAMPLING STRATEGY



Poultry pavilions



Active methods



Millipore air tester



Andersen six-stage



Coriolis micro-air sampler



Passive methods



Material collection



Electrostatic dust collector

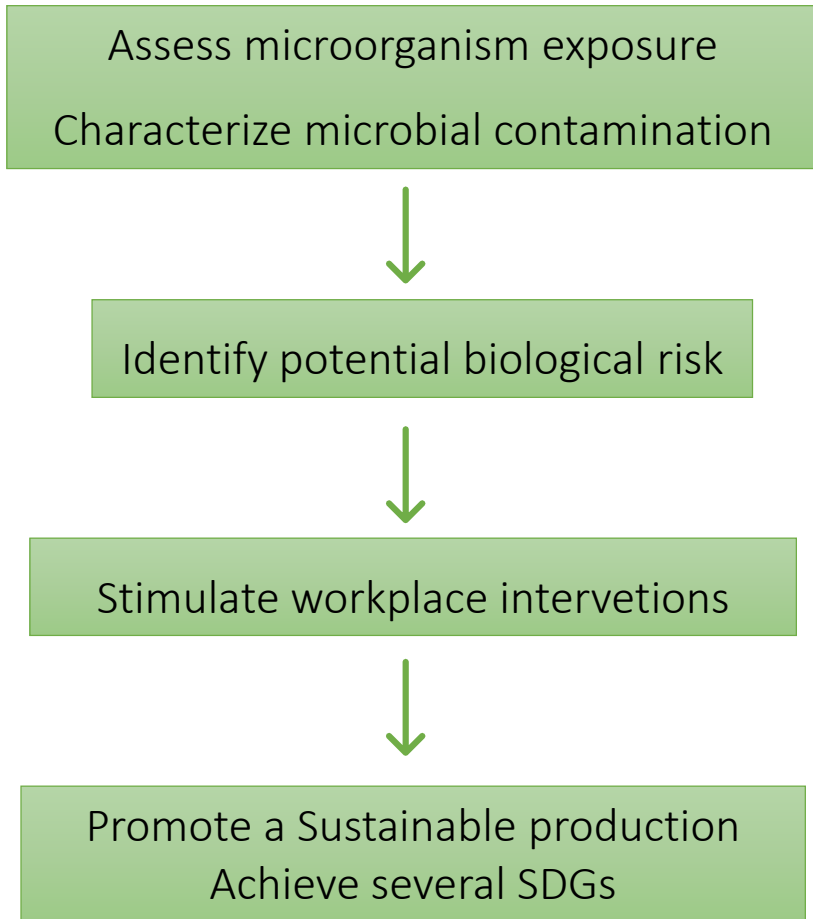


Surface samples

- Microbial characterization
- Mycotoxins assessment
- Citotoxicity assessment

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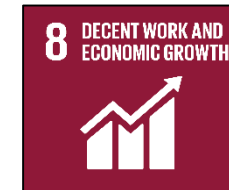
EXPECTED OUTCOMES



End hunger, achieve food security and improved nutrition and promote sustainable agriculture



Good Health and Well-Being



Decent Work and Economic Growth



Responsible consumption and production



Climate Action



Life on Land



Review
Microbial contamination of bedding material: One Health in Poultry production

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Poultry farming as a driver for biodiversity loss and pandemics

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The dark side of wood shavings: One Health intervention to meet the Sustainable Development Goals on sawmills and poultries

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Renata Cervantes, Msc, PhD student

Pedro Pena, Msc, PhD student





Animal and human well-being



Safe working environment



Economic viability



Food safety

- [1] Scoones, Ian. 2007. Sustainability, *Development in Practice*, 17:4-5, 589-596, DOI: 10.1080/09614520701469609
- [2] Kleyn, F.J., & M. Ciacciariello, M. 2021. Future demands of the poultry industry: will we meet our commitments sustainably in developed and developing economies?, *World's Poultry Science Journal*, 77:2, 267-278, DOI: 10.1080/00439339.2021.1904314
- [3] Williams, C. (2009). Poultry waste management in developing countries. Food and Agriculture Organization of the United Nations. *Poultry Development Review*