

## **Food Security, Emerging Infectious Disease and Our Increasingly Small Planet**

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### **ABSTRACT**

Humanity is at a crossroads as we seek to deliver safe, nutritious, ethical and sustainable diets for the 9 billion people and over 27 billion dependent companion and food animals predicted by 2050. The Sustainable Development Goals (SDGs), launched in 2015, encourage us to rethink the linkages between health security, nutrition security, sustainable agriculture and livestock production and to review associated policy frameworks.

From early history, wildlife played a critical role in the emergence of Homo sapiens. Utilisation of wild animal-source foods through hunting and gathering was the main evolutionary driver of an upright posture and gait and was critical to nutritional health, development and early expansion of our species. Archaeology places the beginning of agriculture before 7000 B.C. and animal domestication (mostly dogs used as hunting aids) thousands of years prior to that time. Since the 1880s, the intensification of livestock production has led to increased food production,

but, at the same time, it has also contributed to the emergence, spread and maintenance of new disease agents, antimicrobial and pesticide resistance, changing nutritional profiles of food and increased interaction and movement of people, plants, animals and microbes.

Taking a One Health approach to realigning economic and policy drivers is a complex but essential endeavour if we are to strengthen health security and improve nutrition security for all. By employing interdisciplinary tools and working in collaboration with the health, agriculture and private sectors, we must actively engage in discussions and practices relating to: (i) the safe production of food using the principles of sustainable and ethical agriculture; (ii) assessing the optimal use of feed fit for human consumption in relation to the types and numbers of domestic animals raised; and (iii); restructuring health services to place a higher value on preventive medicine and One Health.