**Getting the metrics right to define the critical role livestock will play in future sustainable circular food systems**

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In most farming systems, livestock’s main function is food production, but they provide many other products and services such as fibre, hides, energy, fertilisers, feed, insulation, pharmaceuticals, nutraceuticals, biodiversity and landscape management (e.g. fire prevention), traction, contributions to culture, mental wellbeing as well as being an integral part of vibrant rural communities across the globe. In the context of climate change, measurement of the use of animal resources in all its components is a key question, and it is important to take all the products and services provided by livestock into account when assessing their contribution versus their environmental impact. The multiple products provided by livestock limit the value of comparisons with other foodstuffs using single factor assessments as often conducted in life cycle analysis exercises. All these non-food uses, in addition to food (considering its nutritional value), contribute to the closing of the biological cycle, and are key points to reduce waste and valorise the contribution of animal production to the circular bioeconomy. Some of them, like manure and drug production are alternatives to the use of fossil resources and contribute significantly to improving the climate balance of animal production. Animal by-products also contribute significantly to land use efficiency where alternative plant-based products would use land which could have otherwise been used to produce food directly (e.g. processed animal-protein versus soya as feed). Circular bioeconomy practices need to be designed and assessed regionally so that livestock production promote circularity in a manner that is economically viable and minimises the environmental footprint, while optimising the delivery of food and ecosystem services from agricultural systems which critically meet the needs of local communities and cultures. Defining the metrics and assessing these practices will generate the data needed to inform the development of livestock food systems through a sustainable circularity lens.