ID: 143 A sustainable intensification model in Uruguayan livestock production: state policies, local research and innovation

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Uruguay has designed its sustainable intensification strategies of livestock production, mainly through the following issues:

Traceability: The entire Uruguayan herd carries a mandatory electronic ear tag which enables local and overseas consumers to have the confidence that, should any human health issues arise while consuming their meat, the infected animals would be easily and quickly traced down.

Soil utilisation and management plans: Based on years of foreign and local research, a law was passed in which every crop has to be presented within a soil utilisation and management plan, where pastures are the best rotation component to stop erosion and carbon losses.

Animal welfare (AW): Both at industry and farm levels, national research has been making valuable contributions to improve these activities from the AW point of view.

Climate change mitigation: Intense research has recently determined the whole supply chain Carbon Footprint, pointing out that over the years, Uruguay has improved its CO_2 equivalent/kg of produced meat. Recently, animal breeding research has focused on enhancing bovine efficiency through the use of genomics in order to decrease CO_2 equivalent emissions.

Meat as healthy food: Since 78% of livestock production is sustained by natural grasslands, research has proved that grass-fed animals present desirable fatty acid profiles and Vitamin E content.

Considering rural inhabitant's life quality: Research has focused on automation and feeding methods in order to reduce the necessary time to perform these activities.

All these issues, which intend to lead Uruguayan livestock production towards a paradigm shift, would not be possible without a multidimensional and interinstitutional approach, tending towards increasing technology incorporation while building private-public partnerships and constructing sate policies upon solid scientific foundations.

ID: 28 Productivity and technical efficiency of suckler beef production systems: trends for the period 1990 to 2012

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Over the past 23 years (1990–2012), French beef cattle farms have expanded in size and increased physical labour productivity (hectare and livestock units per worker) by over 60%, chiefly, though not exclusively, through capital intensification (labour–capital substitution) and simplifying herd feeding practices (more concentrates used). The technical efficiency of beef sector production systems, as measured by the ratio of the volume value (in constant euros) of farm output excluding aids to volume of intermediate consumption plus volume of annual fixed capital consumption, has fallen by nearly 20% while income per worker has held stable thanks to subsidies and the physical labour productivity gains made. This aggregate technical efficiency of beef cattle systems is positively correlated to feed self-sufficiency, which is in turn negatively correlated to farm and herd size. While volume of farm output per ha of agricultural area has not changed, forage feed self-sufficiency decreased by 6 percentage points. We did not observe economies of scale in these French beef cattle farms. The continual increase in farm size and physical labour productivity has come at a cost of lower production-system efficiency—a loss of technical efficiency that 20 years of genetic, technical, technological and knowledge-driven progress has barely managed to offset.