Practical Sustainability in Action: Global Insights from the Field

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About the Author

Vanessa Chiamulera is an agribusiness management consultant and director at Jera Agro Inteligência. She holds a degree in Business Administration with a specialization in agricultural management. Her career was built directly in the field on her family farm, structuring teams, organizing processes, and implementing governance systems in farms of different sizes. Her practical experience, strengthened by continuous study, shapes her view that effective sustainability depends on professional management, data-driven decision-making, and the integration of people, processes, and technology. As a Nuffield Scholar, she visited nine countries to understand how ESG is applied in practice, gathering insights that she now translates pragmatically to the Brazilian context.

EXECUTIVE SUMMARY

This report compiles global insights on rural sustainability based on agricultural properties, cooperatives, government bodies and research centers visited in nine countries through the Nuffield Global Agri-Business Program. The analysis highlights how social technologies (management, cultural practices, capacity building, governance) and machine-based technologies (sensors, automation, digital traceability, precision irrigation, biodigesters) complement each other to build more efficient, resilient, and competitive farming systems.

The cases visited demonstrate that effective sustainability emerges from management, respects local conditions, and adapts to available resources. Low-cost initiatives—such as managed grazing, cooperativism, simple vertical integration, and structured processes—generate significant impact when aligned with strong governance and long-term vision. In parallel, advanced technological solutions increase precision, lower waste, reduce climate-related risks and add value along supply chains.

There is no single ESG model. Each country adapts its sustainability approach to its economic, social, and environmental context. The key recommendation for Brazil is to build its own integrated model, grounded in professional management, data, technology, and local culture—turning sustainability into competitive advantage and long-term resilience.

CONCLUSIONS

1. Effective sustainability emerges from management and depends on integrating people, processes, and technology

International experiences show that ESG is not an isolated collection of actions; it is a decision-making system embedded in planning, procurement, resource management, labor organization, and governance. Countries such as Japan, Ireland, and the United States demonstrate that farms with clear routines, operational controls, performance indicators, and a culture of continuous improvement achieve consistently better outcomes in efficiency, profitability, and conservation. Sustainability that works is sustainability rooted in professional management and long-term decision-making.

2. Social technologies generate productivity and inclusion with low cost and high scalability

Practices such as team training, cooperative models, grazing management, crop rotation, community engagement, and structured governance showed significant impact in multiple countries. In Uruguay, Paraguay, and Argentina, social technologies were essential to soil regeneration, local inclusion, and operational improvement. These practices strengthen resilience, reduce risk, and enhance the capacity of small and medium farmers to remain competitive.

3. Machine-based technologies deliver precision and competitiveness when supported by solid governance

Sensors, digital traceability, automation, biodigesters, renewable energy systems, biological inputs, and precision agriculture tools enhance productivity, reduce costs, and improve climate resilience. However, these tools depend on structured management to generate consistent returns. Countries like Belgium, Ireland, and the USA show that technology without governance tends to be ineffective. The combination of innovation and disciplined management is what turns ESG into measurable results.

4. Sustainability is territorial: each country shapes ESG according to its own reality

Uruguay advances through regenerative grazing and full traceability; Argentina leverages integrated crop-livestock systems; Japan balances technology with social innovation; the US prioritizes efficiency and risk management; England uses vertical integration and agritourism; Ireland combines conservation payments with tradition and science. This diversity demonstrates that copying external models is ineffective. ESG delivers results only when adapted to local economic, social, and environmental contexts.

5. Environmental actions dominate global visibility, but governance and social pillars determine long-term results

The technologies observed (p. 23) show a strong predominance of environmental initiatives; however, farms with robust governance and structured social strategies achieved more stable results. Without clear processes, leadership, team organization, and performance metrics, environmental technologies lose their effectiveness. Similarly, without social inclusion, sustainability cannot be long-lasting. An effective ESG model demands balance among all three pillars.

6. Brazil has strong potential to integrate social and technological solutions at scale and build a competitive ESG model

Brazil already has strong foundations in tropical agriculture—ABC+ Plan, ILPF systems, crop rotation, technical assistance, and diverse production systems. However, it still needs standardized ESG indicators, stronger governance at the farm level, and territorial adaptation of sustainability practices. Global experiences show that, with management, data, and long-term planning, Brazil can lead a new integrated, efficient, and scalable ESG model tailored to national realities.

RECOMMENDATIONS

1. Treat ESG as a property-wide decision-making system, not as an external narrative
Environmental, social, and governance criteria should guide daily decisions—technical procurement, resource allocation, labor management, financial planning, and process organization. This reduces waste, increases efficiency, and strengthens the farm's ability to anticipate risks. Sustainability becomes a strategic operational axis rather than a parallel discourse.

2. Integrate social technologies and machine technologies as a continuous development strategy
Training, structured routines, protocols, cultural alignment, and cooperativism form the foundation that enables automation, sensors, digital traceability, renewable energy, and biological inputs to deliver consistent results. When these two fronts evolve together, the operation becomes predictable, resilient, and more competitive.

3. Institutionalize operational governance with consistent routines and clear metrics
Controls, financial and physical targets, well-defined contracts, accurate inventory management, structured planning, and performance indicators transform governance into a daily operational tool. This discipline reduces losses, improves execution, and strengthens resilience to market and climate variability. Governance is process, not paperwork—and requires consistency.

4. Define indicators that reflect efficiency and long-term evolution
Metrics such as margin per hectare, water and energy consumption, labor productivity, and direct/indirect costs give visibility to performance and support decision-making with accuracy. By monitoring key indicators, farms shift from reactive management to data-driven strategy.

5. Turn sustainability into an economic and long-term strategy
Regenerative systems, diversification, circular economy, integrated production, and soil efficiency reduce variable costs, strengthen soil health, increase climate resilience, and create long-term stability for rural families and businesses. Brazil's scale and diversity allow it to lead this agenda and convert sustainability into competitive advantage and rural permanence.