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How can we measure 'green MSD'?



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Practical measurement solutions from climate-smart livestock inputs in Georgia

This blog builds on our first blog – [What does green really mean?](#)

When the [Georgian ALCP2 programme](#) team began to examine how climate change was affecting dairy and beef farmers, its impacts were already visible in everyday routines. Hotter summers and colder winters increased stress and impaired digestion; new diseases and reduced immunity were disrupting production. Farmers talked about strange new illnesses; cows losing appetite during heat waves; milk yields dropping sharply on hot days; reduced weight gain; and calves not thriving or growing at the pace they once did.

The question became obvious: how do we measure resilience in a system where climate pressure is already shaping production?

Rather than starting with environmental models or technical frameworks, the ALCP2 team began by observing what farmers and businesses notice first. This feedback became the foundation for measuring green MSD.

Productivity: the clearest adaptation juncture?

When Roki Ltd, a national veterinary input supplier, introduced climate-smart livestock packages¹ addressing the challenges directly experienced by farmers, the first feedback from farmers was direct and practical:

“My milk yields are back up.”

“The animals gained weight even in the heat.”

“We had fewer sick calves this season.”

These observations matched the programme’s productivity indicators: milk yield, weight gain, fewer diseases and lower mortality. In a normal year these would be standard performance measures. Under climate stress, they became adaptation indicators.

If a cow maintains milk production during heat spells, that is resilience.

If disease pressure drops despite shifting temperatures, that is resilience again.

In Georgia, productivity was the easiest and most reliable indicator of whether climate-smart practices were taking hold. It also aligned naturally with what farmers already track in their daily work, and what the programme routinely tracks within its interventions.

¹These included reconfigured combinations of feed additives, veterinary treatments and advisory guidance tailored to specific climate stresses such as heat, cold, mastitis and weakened immunity.

Efficiency: where resilience becomes profitable

The second major signal came from efficiency. Farmers using climate-smart inputs wasted less feed, used fewer medicines and suffered fewer losses. They described these gains simply:

“We spent less.”

“We wasted less.”

“Fewer animals died”

“The animals coped better.”

Efficiency matters in two ways.

First, it improves profitability. Better feed conversion, fewer illnesses and lower mortality reduce the cost of production.

Second, it has environmental effects. Animals that convert feed more efficiently emit less methane per unit of output and use less inputs (eat less).

Adoption of Roki’s improved feeding packages resulted in input efficiency alongside reductions in methane emissions. Improved immunity and digestion also reduce antibiotic use, which in turn lowers the release of antibiotics into effluent that can harm soil and watercourses.

It was at this point that green MSD became commercially viable. Efficiency indicators captured both business performance and climate adaptation at the same time.

The sustainability indicators that tie it together

The farmers' ability to recognise the negative impact of climate change on their production systems and implement management changes to mitigate them is a key measure of adaptation. So, alongside productivity and efficiency, the ALCP2 team tracked a few simple, explicit green indicators - including behaviour change and perceptions - that are vital to measuring climate adaptation. These included farmers feeling more resilient to climate shocks and better equipped with the knowledge and means to respond; producers adopting more sustainable practices to mitigate negative climate impacts; and a reduced carbon footprint because of improved livestock performance.

This resulted in farmers:

- reporting they felt more resilient because their animals stayed productive during extreme temperatures

- seeing their practices as more sustainable because they used fewer medicines and lost fewer animals

- reducing their carbon footprint through lower methane emissions and reduced antibiotic use, as improved feed conversion and immunity followed the adoption of the new packages

These indicators were intentionally light and practical. They captured what farmers could observe and what influenced their decisions. There was no need for complex environmental accounting.

Why these indicators worked

The strength of this approach was its alignment with market incentives.

Farmers bought climate-smart inputs because they understood that they improved performance in the face of unrelenting climatic challenges. Pharmacies stocked more because demand increased. Roki expanded its distribution because the products sold consistently.

The same impact that drove adoption also generated the data needed to measure green MSD. Productivity, efficiency and simple behaviour and resilience markers reflected changes that were happening organically in the market system.

In other words: climate adaptation showed up where good business decisions were made.

What MSD practitioners can take from this

The Georgia experience suggests that green MSD does not need a parallel indicator framework (a separate set of complex environmental indicators tracked alongside core MSD results). It requires paying attention to where climate stress intersects with market incentives.

A small set of indicators was enough:

1. **Productivity indicators**

Milk yield, weight gain, disease reduction and lower mortality. These show whether producers stay productive under climate extremes.

2. **Efficiency indicators**

Better feed use, fewer medicines, reduced losses. These show whether adaptation is also improving profitability.

3. **Simple green indicators**

Farmer-perceived resilience, uptake and application of more sustainable practices, and reduced carbon intensity through better animal performance. These capture the environmental benefit without imposing new measurement burdens.

Together, these indicators provided a full picture of how the system was adapting.

Closing reflection

Measuring green MSD begins with what farmers and businesses already track.

In Georgia, climate-smart livestock inputs were not adopted because they were labelled green; they spread because they kept animals productive, reduced losses and made farms more efficient in difficult weather.

Productivity captured the improvement; efficiency explained why it mattered for businesses and farmers; the green indicators captured the environmental contribution.

This combination made green MSD measurable, practical and fully aligned with market behaviour.