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# The Role of Artificial Intelligence in Nutrition Programming

March 2026



# Beyond the hype: Re-engineering nutrition systems through strategic Artificial Intelligence (AI)

## Recommendations from Genesis Analytics, Audere Africa and Global Alliance for Improved Nutrition (GAIN)

The global nutrition sector has reached a defining crossroads. Despite decades of evidence-based interventions, the triple burden of malnutrition persists - characterised by the coexistence of undernutrition (including wasting and stunting), widespread micronutrient deficiencies, and rising levels of overweight, obesity, and diet-related non-communicable diseases often within the same countries, communities and even households.<sup>1</sup>

For policymakers and programme implementers, the challenge is twofold: advancing the evidence base on how to improve population diet quality, and ensuring that established, proven interventions are delivered reliably and at scale. Across global health, the difficulty is not necessarily not knowing what works - it is closing the gap between policy ambition and effective, equitable implementation.<sup>2</sup>

AI is increasingly positioned as a tool to address these execution bottlenecks. The World Health Organization has recently announced a new Collaborating Centre on AI for Health Governance, signalling growing institutional attention to this shift.<sup>3</sup> As a technology designed to process large volumes of data, detect patterns, and automate routine cognitive tasks, AI may offer particular value in strengthening decision-making, improving consistency, sharpening targeting, and reducing inefficiencies in delivery.

To move beyond the hype, however, we must examine where AI genuinely adds value, how it can be deployed safely and ethically, and whether it represents a sound investment for fragile health systems. AI will not solve malnutrition. But when strategically embedded into national systems, governed responsibly, and financed sustainably, it has the potential to meaningfully strengthen the execution layer of nutrition delivery.

In January 2026, Genesis Analytics, together with Audere Africa and GAIN, convened a high-level virtual dialogue on the role of AI in nutrition programming. The session brought together donors, AI engineers, and health system leaders to move beyond the hype cycle and interrogate a harder question: where can AI meaningfully strengthen nutrition systems? The discussion deliberately focused on systems-level applications, governance realities, and cost-effectiveness under constraint. The discussion surfaced three structural shifts that challenge how the sector is currently thinking about AI in nutrition. These insights challenge three prevailing assumptions in the global health AI discourse.

- <sup>1</sup> Prentice, A. M. (2023). *The triple burden of malnutrition in the era of globalization*. Nestlé Nutrition Institute Workshop Series, 97, 51–61. Available [here](#).
- <sup>2</sup> Gates Foundation. The Road to 2045. 2026 Gates Foundation Annual Letter, accessed 13 February 2026. Available [here](#).
- <sup>3</sup> World Health Organization. (2025, March 10). *WHO announces new collaborating centre on AI for health governance*. Available [here](#).

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## 1. The value proposition

### Decision support, not structural reform

AI's technical capabilities are vast, but its power in nutrition lies in how it is applied strategically to solve human-centric problems - it will not fix broken supply chains or eliminate poverty.<sup>4,5</sup> In practice, AI functions as a tool for decision support, consistency, targeting, and continuity of care.

#### The true value adds include:

- Shifting from reactive survey data to proactive forecasting.<sup>6</sup> Traditional nutrition responses rely on historical survey data, which often identify a crisis only after it has peaked. AI-powered tools, such as the Food and Nutrition Dashboard (FND)  in Kenya, can process vast amounts of routine clinical data and satellite imagery to forecast malnutrition hotspots at a granular sub-county level, months in advance. As Professor Laura Ferguson, the Principal Investigator of the FND, noted, *"this allows resources to be allocated proactively rather than reactively"*.
- In Bangladesh, GAIN's food and nutrition policy chatbot  has turned over 2,000 pages of dense, jargon-heavy food policy into a user-friendly interface for decision-makers. By reducing the time needed to find and interpret critical information, AI acts as a technical translator, converting dense, jargon-heavy policy documents into clear, actionable guidance for those responsible for programme delivery and policy decisions.
- At the level of individual care, AI adds value by automating the repetitive interactions, such as basic dietary advice or adherence nudges, that currently stretch human capacity thin. This allows health workers to shift their focus to complex risk assessment and building the trust-based relationships that drive long-term behaviour change. As Yulia Sidorova from Clinivia reminded us: *"AI should replace repetition, not the relationship"*.

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<sup>4</sup> Artificial Intelligence in Nutrition and Dietetics: A Comprehensive Review of Current Research - PMC, accessed on February 8, 2026. Available [here](#).

<sup>5</sup> Optimised supply chain model for therapeutic foods to malnourished children in Madagascar, accessed on February 8, 2026. Available [here](#).

<sup>6</sup> AI and Global Food Security: A Focus on Early Warning Systems - CSIS, accessed on February 8, 2026. Available [here](#).

AI must know when not to answer to prevent hallucinations that scale without visibility.



## 2. Safeguarding the vulnerable

### Operationalising responsible AI

Ensuring safety and ethics in low-resource settings is not a “checkbox” to tick before launch, but a commitment to a continuous governance system. In nutrition, where misinformation about infant feeding or pregnancy can have significant detrimental consequences, the risks of “misinformation” are acute.

#### Considerations of responsible AI include:

- Convening participants noted that users may trust AI more than humans, leading them to disclose sensitive issues such as food insecurity or self-harm in private digital spaces. This “confessional effect” creates a significant ethical responsibility: if an AI elicits a disclosure of hunger or self-harm, the system must have a technical and ethical protocol to connect that user to the care they need. That said, a critical safety feature of the AI’s capabilities is its ability to recognise its own limitations and escalate high-risk situations to a human expert. As Dino Rech, CEO and founder at Audere Africa, emphasised, “AI must know when not to answer to prevent hallucinations that scale without visibility”.
- AI deployment must prioritise local standards and ensure that data stays within the control of the communities it serves.<sup>7</sup> Participants also highlighted that true ethics involves building a “positive culture” where people understand and trust that their data is safe and that the technology provides real value in exchange for their disclosure.

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## 3. Sustainable financing

### From pilot economics to Total Cost of Ownership (TCO)

The high startup costs of AI can be a barrier for fragile systems. To make AI a worthwhile investment, we must shift our focus from “pilot economics” to the TCO - the full lifecycle cost of designing, integrating, operating, maintaining, updating, and governing a system over time. As Florentin Albu, Director of Tech4Impact at CIFF, stated, “*We want to understand what is the total cost of ownership across the ecosystem*”.

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<sup>7</sup> From Aspiration to Implementation: The African Union AI Continental Strategy and the Development-Governance Paradox - ResearchGate, accessed on February 8, 2026. Available [here](#).

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**Making the investment case requires looking beyond startup costs to assess whether AI reduces system costs or simply adds complexity:**

- AI is rarely cost-effective when it simply adds a new layer to an already broken workflow. It becomes a “force multiplier” when it replaces expensive, repetitive human effort.<sup>8</sup> By leveraging existing digital infrastructure, similar to Kenya’s FND, using existing government data, programmes can avoid the “data tax” of expensive, one-off surveys.
- Once an AI platform is built, the marginal cost of supporting an additional user typically drops. This creates the possibility of scaling service coverage without proportionate increases in personnel costs - provided quality and governance are maintained.
- The innovative nature of AI makes it well-suited for financing solutions that blend government, private sector, and donor funds. In line with the growing emphasis on catalytic capital,<sup>9</sup> donors should focus on funding early-stage research, development, and start-up costs, while working with governments to ensure long-term total cost of ownership, including maintenance, training, and data hosting, can be sustainably absorbed.

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## Strategic Implications for the Future

### For global funders & system leaders

#### From “pilot economics” to sustainable architecture

- **Fund systems, not silos:** Avoid funding standalone apps that create parallel data silos. Priorities should be given to tools that integrate seamlessly with national digital health architectures (e.g., DHIS2). Sustainable AI builds on existing government systems rather than creating parallel, donor-dependent silos.
- **Shift to TCO:** Move beyond funding the “hype” of startup costs. Investment decisions must be based on the TCO (maintenance, data hosting, retraining). Innovative financing models should blend donor catalytic capital with government resources to ensure the system can survive after the initial grant ends.

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<sup>8</sup> Artificial Intelligence in Nutrition and Dietetics: A Comprehensive Review of Current Research - PMC, accessed on February 8, 2026. Available [here](#).

<sup>9</sup> Gates Foundation. The Road to 2045. 2026 Gates Foundation Annual Letter, accessed 13 February 2026. Available [here](#).

- **Enforce data sovereignty:** Ensure that data generated within countries are governed under national regulatory frameworks and aligned with local priorities, and remain open access. Funders should support contextually relevant policy frameworks, such as the African Union’s Continental AI Strategy<sup>10</sup>, to promote equitable data partnerships, open standards, and responsible cross-border collaboration. Data should strengthen domestic systems and research capacity, rather than disproportionately contributing to external commercial value.

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## For national governments & policymakers

### Governance and “decision support”

- **Define AI as “decision support”, not structural reform:** Policymakers must be clear on AI’s limits. As the convening participants emphasised, AI can optimise data and target resources, but it cannot fix structural market failures, inflation, or the price of nutritious food. Use AI to bridge the “know-do” gap, not to paper over infrastructure deficits.
- **Democratise technical knowledge:** Leverage AI to reduce the “cognitive load” on government officials. Following the Bangladesh example, deploy secure, closed LLMs to translate dense technical policy documents into accessible, actionable insights for decision-makers, saving time and ensuring consistency across ministries.
- **Mandate “interoperability by default”:** Regulatory frameworks should prevent the fragmentation of nutrition data. Governments must enforce standards requiring all private-sector and donor-funded AI tools to feed data back into central ministry databases (e.g., DHIS2) to inform national planning.

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## For private sector & technical implementers

### Delivery and safety

- **Design inside the care pathway:** Value comes from the delivery layer, not the algorithm. If an AI identifies a risk (e.g., a high-risk for acute malnutrition), there must be a hard-coded, functional referral to a human nurse or clinic. Without this “human in the loop” referral, identification alone is insufficient and can compromise ethical standards of care.
- **Safety is a process, not a checkbox:** Pre-launch validation is only the starting point. Implementers must commit to continuous safety monitoring to detect model drift and subtle, real-world harms that only emerge once the tool is in use. This includes watching for the “confessional effect”, where users share sensitive issues (such as hunger) to the AI, requiring immediate, automated pathways to human support.
- **Replace repetition, not relationships:** Design AI tools to automate high-volume, low-complexity tasks (such as standard dietary reminders) so frontline workers can focus on the complex judgment and trust-building that only humans can provide. This “force multiplier” approach reduces daily workload while strengthening the human side of service delivery.

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<sup>10</sup> African Union (2024). *Continental artificial intelligence strategy: Harnessing AI for Africa’s development and prosperity*. Available [here](#).

