Tackling Hidden Hunger in Rwanda

# Executive Summary

This brief presents a data-driven strategy to reduce childhood stunting in Rwanda. By analyzing national survey data with machine learning, it identifies hotspots and key drivers of malnutrition. The proposed interventions align with NST-1 and HSSP-IV strategies and are delivered via an interactive dashboard for decision-makers.

# Background & Challenge

Childhood malnutrition, particularly stunting (33% prevalence), remains a major health issue in Rwanda. Disparities exist across districts and social groups. This project uses data science to inform tailored interventions.

# Objectives

* • Generate district-level maps of malnutrition using CFSVA 2024
* • Build ML models (XGBoost, LightGBM, Logistic Regression)
* • Recommend data-driven, equity-focused policy interventions

# Key Findings

## Geographic Distribution

* • Western and Northern districts (Nyabihu, Rubavu, Rutsiro, Burera, Gakenke) show high stunting
* • Rural children are more affected than urban peers
* • Wasting and underweight concentrated in fewer areas

## Top Predictors

* • Nutrition: Poor dietary diversity, bad feeding practices
* • Health: Limited antenatal care, maternal undernutrition
* • WASH: Long water-fetching time, no sanitation
* • Socioeconomic: Poverty, low maternal education

# Policy & Intervention Recommendations

## Short-Term Interventions (0–1 Year)

* • Micronutrient supplementation via mobile clinics
* • Scale up IYCF counseling using CHWs
* • Distribute fortified foods
* • Emergency WASH: Water trucking, handwashing kits

## Medium-Term Strategies (1–3 Years)

* • Integrate nutrition into maternal health & ANC
* • Promote kitchen gardens & biofortified crops
* • Expand school-based feeding programs
* • Improve district-level coordination

## Long-Term Vision (3–5+ Years)

* • Institutionalize CHW monitoring in health system
* • Scale Girinka + kitchen gardens
* • Add nutrition to school curriculum
* • Use machine learning for early warning
* • Adopt equity-based budgeting

# Community Health Workers (CHWs)

CHWs are central to Rwanda’s success. Their work includes growth monitoring, supplement tracking, nutrition education, and early detection. Recommendation: Digitally empower CHWs and reward performance.

# Implementation Notes

* • Customize interventions using dashboard data
* • Engage local leaders and women’s groups
* • Partner with NGOs and private sector

# Conclusion

By combining machine learning, national data, and policy alignment, this project helps Rwanda target stunting at the local level. With community-driven and multisectoral action, a healthier, equitable future is possible.

# References

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