

POLICY BRIEF

Maternal-Fetal Medicine

Strengthening maternal, newborn, child, and adolescent health (MNCAH) resilience in Makueni County amid climate change: A policy brief

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Received: June 2025; Revised: June 2025; Accepted: June 2025; Available online: 14 July 2025

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Makueni County, situated within Kenya's arid and semi-arid lands (ASALs), faces heightened vulnerability to climate change. Environmental stressors such as extreme heat, prolonged droughts, and flash flooding are becoming more frequent and severe. These climate shocks are increasingly contributing to food and nutrition insecurity, which, in turn, has profound implications for maternal, newborn, child, and adolescent health (MNCAH).

As of 2023, over two million people across Kenya's 23 ASAL counties remained food-insecure. Within this population, 847,932 children aged 6 to 59 months and 124,359 pregnant and breastfeeding women required treatment for acute malnutrition. Climate-related disruptions are undermining access to clean water and sanitation services, complicating pregnancy outcomes, breastfeeding practices, child nutrition, and menstrual health and hygiene. Moreover, they heighten susceptibility to disease outbreaks,

especially parasitic, respiratory, vector-borne, and waterborne infections.

In Makueni County, the health implications of climate change are evident in key indicators. In the 2022 Kenya Demographic and Health Survey (KDHS), maternal mortality was 479 per 100,000 live births, the neonatal mortality rate was 26 per 1,000 livebirths, and not on track for sustainable development goal 3. While 76% of women attend at least four antenatal care (ANC) visits and 92% of births are attended by skilled health personnel, these achievements remain fragile in the face of climate threats. Nutrition data shows that 20% of children under five are stunted (indicating chronic malnutrition), 4% are wasted (acute malnutrition), 9% are underweight, and 3% are overweight - trends driven by both undernutrition and poor dietary diversity caused by environmental shocks.

Adolescents, particularly girls, are also significantly affected. Although adolescent

pregnancy rates have declined from 31% in 2018 to 11% in 2022, challenges persist. Poor water, sanitation, and hygiene (WASH) infrastructure, hormonal imbalances potentially caused by environmental toxins, and psychosocial stress all intersect with climate-related disruptions, limiting school attendance and access to reproductive health services.

Makueni's exposure and sensitivity to climate stress are well documented, with exposure and sensitivity scores of 0.368 and 0.317, respectively. Water availability and food security remain key areas of concern. These conditions increase health risks and exacerbate inequalities, especially among pregnant women, newborns, and young children.

To address these complex and interrelated challenges, the policy response must be both multisectoral and context-specific. Strengthening the resilience of the health system is essential. Nutrition interventions outlined in the National Nutrition Action Plan (2018–2022) and the Food and Nutrition Security Policy Framework (2017–2022) provide a strong foundation. In Makueni County, the health system has made strides by establishing Kangaroo Mother Care units and providing nutrition outreach services, as indicated in the County Integrated Development Plan (CIDP 2023–2027).

Interventions should prioritize large-scale food fortification, multi-micronutrient supplementation, and therapeutic nutrition services, including the distribution of Ready-to-Use Therapeutic Foods (RUTF). These services must be integrated into maternal and child health platforms. School feeding programs should be scaled up to reach vulnerable children, while efforts to promote regenerative agriculture, biodiversity, and community gardens align with the County's Climate Change Adaptation and Resilience Projects.

Health workers need continuous capacity building to provide nutrition education, prevent, screen and manage malnutrition, and

respond to acute and chronic nutritional deficiencies. Reliable last-mile delivery systems for nutrition supplies, MNCAH commodities, comprehensive ANC nutritional education, and contingency stocks are critical for climate responsiveness. Improving WASH infrastructure and strengthening disease surveillance will also reduce infection-related mortality and morbidity.

On the demand side, local leadership and community participation are central to delivering culturally appropriate, reviewing the indigenous knowledge system, and providing gender-sensitive interventions. Community engagement strategies should promote nutrition literacy, user behavior change communication tailored to ASAL settings, and empower peer educators, local climate champions, men and gatekeepers as change agents and advancing health equity. These approaches - recommended in the Kenya Health Promotion Strategy (2019–2023) help shift harmful norms and improve access to services and embrace gender-sensitive interventions. Mobile health (mHealth) and digital platforms can expand health information access, facilitate community feedback, and track progress in real-time.

Social protection mechanisms, particularly cash transfers under the National Safety Net Programme and school meal programs, must be expanded in food-insecure areas. Makueni's County Climate Change Fund (CCCF), allocates at least 1% of the development budget to climate-resilient community priorities, and is a promising model for financing health and nutrition interventions.

In conclusion, addressing the intersection of climate change and MNCAH in Makueni County is not only a public health priority but a rights, investment, and developmental imperative. By aligning national policies with county-level actions and investing in integrated, community-driven solutions, Kenya can protect its most vulnerable and marginalized populations and build a climate-resilient, health-secure future.

Acknowledgement

This scientific publication was enabled by a grant from the Gates Foundation-ICRHK under the “Okoka mama na Mtoto” Initiative a collaboration of 13 partners including Women Engaged in Development, an NGO working in Makueni County.

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