

**LESSONS FROM REGIONAL PERSPECTIVES ON AGRICULTURE, NUTRITION AND HEALTH  
LINKAGES:  
EXPERIENCES FROM THE MICAH PROGRAMME  
(1996 – 2005)**

Alexander A. Kalimbira, PhD, Senior Lecturer in Human Nutrition, University of Malawi, Bunda  
College of Agriculture, P.O. Box 219, Lilongwe, Malawi. akalimbira@yahoo.com

**Background**

Owing to the high prevalence of iodine, iron and vitamin A deficiencies in Malawi, a micronutrient and health (MICAH) programme was conceived and implemented in Malawi (1996 – 2005), aimed at improving the nutrition and health status of women and children through the most cost-effective and sustainable interventions. The specific objectives of the programme were to increase intake and bioavailability of vitamin A, iron and iodine; decrease diseases that affect micronutrient nutrition; and, build capacity for delivery systems.

The MICAH programme adopted an integrated community-based approach, interfacing agriculture, nutrition and health interventions, including the following: micronutrient supplementation; food fortification; exclusive breastfeeding; dietary diversification and modification with special emphasis on animal-source foods; prevention, control and treatment of common illnesses particularly parasitic infections (malaria, hookworm and schistosomiasis); water and sanitation; training of communities and beneficiaries; and, support to national policies.

Impact of MICAH Programme on Stunting and Anaemia

**Stunting**

At the baseline (1996), the prevalence of stunting (60.2%) was very high. By 2000, the prevalence of stunting had declined to 50.6 and 56.0% in MICAH and Comparison areas, further declining to 43.0% and 45.1% by 2004, respectively. Prevalence of severe stunting at the baseline (34.7%) declined to 15.8% and 17.1% in MICAH and Comparison areas, respectively by 2004.

**Anaemia in Children**

Haemoglobin (Hb) concentration (mean  $\pm$  standard error) was low (89.4 $\pm$ 0.7 g/L) in 1996, with 87.6% of the children being anaemic (Hb<110 g/L). By the end of the programme in 2004, mean Hb had significantly increased in both MICAH (103.7 $\pm$ 0.4 g/L) and Comparison (99.2 $\pm$ 0.6 g/L) children. A higher proportion of children from Comparison areas (70.6%) than MICAH areas (58.6%) remained anaemic at the end of the programme.

**Anaemia in Women**

In 2000, there was no significant difference in Hb concentration (mean $\pm$  standard error) between MICAH and Comparison areas (117.4 $\pm$ 0.4 vs. 116.8 $\pm$ 0.5 g/L), and the corresponding prevalence of anaemia (53.5% vs. 52.9%). By 2004, however, Hb concentration had significantly increased in MICAH but not in Comparison areas (121.0 $\pm$ 0.4 vs. 115.7 $\pm$ 0.6,  $p<0.001$ ), with a significant reduction in the prevalence of anaemia in MICAH areas (44.1%), but not in Comparison areas (54%).

## Conclusions

The Malawi MICAH programme is a potential model for combating stunting and anaemia in rural areas in resource-constrained settings in Malawi, and most likely in countries that have similar settings. It is imperative that the design and implementation of projects and programmes that aim to reduce the high prevalence of various forms of undernutrition in resource-constrained settings should manifest three overarching elements:

- 1) Integration: a battery of interventions in agriculture, nutrition and health, which have known efficacy and effectiveness, enables delivery of the most critical socioeconomic needs of the majority population whose needs are multiple.
- 2) Community-based: the MICAH programme demonstrated that interventions that are implemented at the community and household levels have the best odds of making a significant regress in the high prevalence of undernutrition.
- 3) Long-term projects/programmes: evidently, the MICAH experience shows that projects/programmes that aim to reduce nutrition problems that have a long history to their manifestation should be planned to be implemented over longer periods of time than is usually observed in many projects/programmes.

## Bibliography

Kalimbira, A., MacDonald C. & Randall Simpson, J. (2011). Effective community-based nutrition programming in Malawi. ISBN: 978-3-8443-0993-5. Saarbrücken, Germany: Lambert Academic Publishing.

Kalimbira, A.A, MacDonald, C & Randall Simpson, J. (2010). The impact of an integrated community-based micronutrient and health programme on stunting in Malawian preschool children. *Public Health Nutrition*, 13(5):720 – 729.

Kalimbira, A.A, MacDonald, C & Randall Simpson, J. (2010). The impact of an integrated community-based micronutrient and health programme on anaemia in non-pregnant Malawian women. *Public Health Nutrition*, 13(9):1445 – 1452.

## Comments

This is great Dr!

1. Good elaboration of impact/evidence but the paper needs to distinguish what were the agricultural interventions that we can attribute to nutrition and health changes. Focus more on that, since the workshop dwells on improving agriculture responsiveness to improved health and nutrition.
2. However, try to isolate some challenges that future planners and implementers should look out for i.e. gaps to be addressed in such research to make agriculture more responsive to nutrition and health needs.