

Improved Beans For The Developing World Enhancing Nutrition & Health of PLWHA and Vulnerable communities.

CIAT/ISAR/MOH/USAID, Rwanda

Martha Nyagaya, Human Nutritionist, Africa.

m.nyagaya@cgiar.org



Background

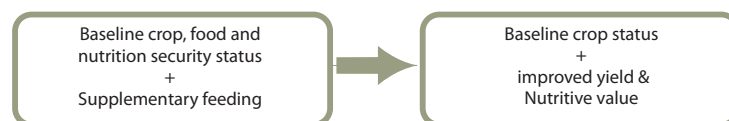
Rwanda is characterized by high prevalence of malnutrition resulting from complex interrelated synergies; poor household food and nutrition security, inadequate production, poor health care and health of environment and high prevalence diseases like HIV/AIDS and malaria. PABRA addresses nutrition needs of vulnerable communities through development of micronutrient rich bean varieties. Poor and food insecure communities are at a great disadvantage when faced with HIV/AIDS.

Malnutrition is one of the major complications of HIV infection and is a significant factor in advancing the disease. In resource poor settings, HIV infection combined with pre-existing malnutrition places a tremendous burden on people's ability to remain healthy and productive. Malnutrition compromises immune function, increasing progression of HIV and other diseases. Restoration and maintenance of adequate nutritional status through food distribution is unsustainable. This project was designed to test the intergration of agriculture, nutrition and health, transitioning from therapeutic feeding to production and utilization of micronutrient rich food baskets. **Objective:**

To influence prevalence of malnutrition and nutrition related disease in PLWHA and other vulnerable communities



Methods



- Subjective and objective baseline food and nutritional security assessment.
 - Short term feeding of families with severely malnourished individuals on a specially-designed fortified food basket assembled from locally available foods provided by farmer groups.
 - Focal point demonstration gardens within health centers and hospitals in 5 provinces to feature selected micronutrient rich bean varieties, orange fleshed sweet potatoes, indigenous vegetables and improved yellow cassava varieties.
 - Agricultural technology dissemination through training, seed multiplication and distribution coupled with agronomic guidance to improve production.
- Promotion of consumption and utilization through development and dissemination of technologies for processing, storage, post harvest value addition, dietary combination and meal preparation.
- Continuous nutrition education for farmer groups, agricultural extension workers, associations of PLWHA, community health workers and nutritionists facilitated through development of training materials and resources for trainers. Serial monitoring of food and nutrition situation at various levels

Strategy

Functional partnership with the health sector
Effective incorporation of nutrition topics into agricultural extension
Linking agricultural extension with participatory learning and action in nutrition
Links with existing food based strategies and nutrition interventions
Nutrition Education with training on food combination and preparation
Demonstration of impact on nutrition and health

Food basket

Food	Protein (%)	Fat (%)	Fe ppm	Zn ppm	Vit. A (RAE)	Ca ppm	P ppm	Mg ppm	Vit. C
Bean	20.7	1.4	52	25	0	107	401	176	6
HP Bean	23.2	1.2	102	45	na	50	479	75	na
Sweet potato (SP)	3.0	1.7	6	3	0	30	47	25	23
BF OFSP	1.2	0.6	11	5	590	20	48	20	46
Cassava	1.4	0.3	3	3	1	16	27	21	21
HP cassava	0.8	0.6	12	9	430	12	44	15	61
Maize	9.2	4.3	59	-	7	43	221	-	8
BF maize	9.5	5.8	50	16	50	15	316	64	22
Sosoma	14.2	3.6	33	7	3.4	34	178	66	0

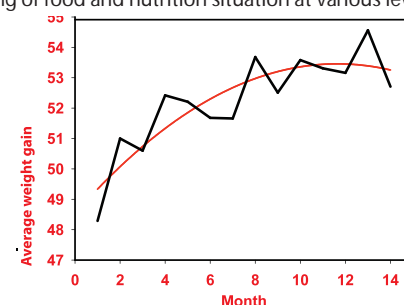
Relief food

Source: CIAT-ATDF-ISAR, Rwanda (2004)

Nutritional Indicative Outcomes

Improved Body Mass Index (BMI)

- From an average of 18 to 24
- Mean BMI 23.4 (range 16.7-31.1)
 - 11% <20
 - 26% >25
- 37% PLWHA still experienced weight loss
- 46% experienced symptoms interfering with food intake



Factors affecting magnitude of impact:

Strong evidence that impacts depend on:

- Initial level of household vulnerability (assets, wealth)
Sex & positioning of the deceased in HH
- Extent of environmental factors (soil fertility, climate)
- Characteristics of adults remaining in household (e.g. skills, education level)
- Seasonal variations in food access

Implications!

Affected households should be urged to:

- Use improved technologies/innovations
- Grow nutrient rich food crop varieties that are high yielding and drought resistant
- Use less labor intensive technologies (improved seed, minimum tillage, intercropping)
- Use processing and value addition techniques to improve nutrient density
- Diversify their diets

Conclusion

HIV/AIDS impacts on households beyond those suffering directly from the disease and as a result has profound effects on entire communities. For agricultural interventions to improve food and nutrition security, the intervention must have a well designed agricultural as well as nutrition component; mutually reinforcing. Food aid and supplementary feeding are essential interventions in rehabilitating malnourished individuals. Improving productivity with the right foods is key to ensuring sustainability of improved nutrition status and provides a malnutrition preventive safety net for vulnerable communities. For PLWHA the chain of cause and effect went both ways, return of good nutrition boosted productivity and capacity for work. It is important to consider such integrated interdisciplinary interventions for promotion of sustainable food security and alleviating malnutrition.