

# Improving nutritional outcome of children in Tanzania and Malawi

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## Key messages

- Stunting, underweight and wasting (Table 1) of the children between 0-23 months is mainly affected by the food that they are consuming which is mainly maize based with poor dietary diversity.
- The quality of the food is also affected by aflatoxin contamination with >80% of the children exposed to aflatoxin through the diet. Hygiene related issues further affect growth and health of children and infants.
- Promoting consumption of locally available nutritionally rich grain legumes -groundnut, soy bean, cowpea and pigeonpea and cereals-finger millet, pearl millet and sorghum in complementary feeding by mothers can improve child nutrition outcomes and diversify incomes as well (Table 2).

## Objectives and approach

- To formulate nutrient-dense complementary food recipes using locally available food crops and transfer of the knowledge to rural communities in Africa RISING project villages reduce malnutrition.
- To study the impact of increased utilization of diversified legume cereal based complementary food on the growth of children under 5 years of age in Tanzania.
- To strengthen the knowledge of women in Malawi in legume budgeting for increased legume availability for both improved economic benefit and improved utilization.
- Ethical approvals were obtained and communities engaged either directly or via Innovation platform activities at community level. Locally available cereals and legumes were used to make the test nutrient diets fed to under five year old children.

## Key results

- Twenty recipes have been developed and categorized into three groups based on the age specific nutrient requirements and food consistency.
- The recipe comprised of maize, finger millet, pigeon pea and soya along, vitamin A rich vegetable (Carrot) and green leafy vegetable (amaranth) (Figure 1 a & b) was accepted by more than 94% of the mothers in 5 villages of Kongwa and Kiteto districts.
- The recipe improved growth of the children in terms of weight and MUAC (mid upper arm circumferences) within 21 days.
- Women's autonomy in decisions regarding legume utilization had positive effect on minimum dietary diversity among children aged 6-23 months.

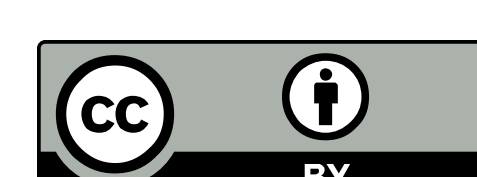
## Significance and scaling potential

- The result show a strong link between consumption of safe and nutritious food, proper hygiene and child growth. This knowledge can be provided to nursing mothers and when linked to SUN initiatives Scope for scaling out will be increased.
- Increasing knowledge on legume budgeting especially for women helps in increasing the legume production both for economy and nutritional benefits.
- A recipe booklet has been developed to be used by mothers, community workers from agriculture, health and other development agents to begin roll out of the improved food diets.

## Partners



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	Z-Score				% of children with Z-Score	
	Mean	SD	Min	Max	> -2	< -2
Wasting	0.04	1.44	-3.62	4.11	93%	7%
Stunting	-1.23	1.69	-6.06	2.28	69%	31%
Underweight	-0.61	1.55	-4.35	3.68	80%	20%

**Table 1.** Under-nutrition status in central Tanzania, 2016 (N=87; 6-23 months old).

Food group	Food Frequency 24hr Recall	
	(n) %	(n) %
Fruits	(35) 12	(91) 31
Vegetables	(169) 58	(120) 41
Fats/Oils	(111) 38	(60) 21
<b>Legumes</b>	<b>(96) 33</b>	<b>(28) 13</b>
Animal Products (Milk)	(71) 25	(57) 19.6
Staples	(280) 96	(273) 94

**Table 2:** Diet Pattern for children aged 6-23 months in legume producing households.



**Figure 1:** (a) Women preparing complementary food with amaranth (b) Men involved in complementary food preparation using legumes, cereals along with vitamin A rich and green leafy vegetables.