

## **Effects of Wild Foods and Food Interventions in reducing the minimum Cost of Diet using Linear Programming Modelling: A case study of Turkana in Kenya.**

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The objective of this study was to determine the minimum cost of diet that fulfills all the nutrients requirements for children 6-8, 9-11 and 12-23 months and non-pregnant - non lactating women, pregnant women and lactating women by modelling locally available foods in different scenarios(with or without wild foods and with or without supplements). The research forms part of Bioversity International, Kenya led-project on Innovative, participatory tools for dietary assessment considering local agrobiodiversity in Turkana County, Kenya.

Six villages were randomly selected from a list of pastoralists (three) and agro-pastoralists (three) communities. Market surveys were conducted at commonly visited markets in plenty and lean seasons. Focus group discussions were held with ten women per village to determine culturally accepted dietary habits. Results from focus group discussions on agrobiodiversity following the 4- cell methodology developed by Bioversity International, were used to select three wild vegetables and three wild fruits for modeling. Micronutrient Powder (MNP) introduced by "Save the Children" as food supplement for children 6-23 months was also considered in the models. All data were entered in the Cost of Diet software developed by Save the Children-UK to model the Locally Adapted Cost Optimized Nutritious (LACON) diet.

The modeled LACON diet without wild foods and MNP showed daily cost in Kenyan Shillings (ksh), 28-37 and 35-47 for children 6-23 months respectively in the plenty and lean seasons whilst it costs 115-167 and 133-202 (ksh) for women, pregnant and lactating women in plenty and lean seasons respectively. Integrating the six wild plant foods revealed 7.1 - 57.1% and 9.5 - 61.4% reduction in the LACON diet cost for the plenty and lean seasons respectively. The MNP effect on the cost of the LACON diet was only 0 - 5.8% reduction for both plenty and lean seasons. Wild foods and MNP integrated together caused the same effect as diet modeled with wild food for both seasons. Iron and zinc nutrient deficiencies were found in the LACON diet among children 6-11 months. Diets modeled with wild foods only and together with MNP make up for these nutrient deficiencies except for diet modeled with MNP only.

The LACON diets remain probably unaffordable for many households irrespective of their wealth level, however, wild plant foods and food supplements have positive impact on the reduction of the minimum cost of diet as well as making up for nutrient deficiencies in diet.