

Agrobiodiversity and dietary diversity for improved nutritional status of mothers and children in Rongai sub-county, Nakuru

This research brief summarises the findings of surveys done in Rongai, Sub-County of Nakuru County in Kenya where the association between agrobiodiversity (the variety of all forms of life directly relevant to agriculture, including crop varieties and animal species) and diet diversity for children 6–23 months old and their mothers or caregivers were determined. We make recommendations on how the situation could be improved.

Introduction

Maternal and child malnutrition remains a public health concern in Kenya despite efforts to improve household food security. In Kenya 26% of the children aged 6–23 months are stunted (KNBS and ICF Macro, 2014). The World Health Organisation (WHO) targets reducing stunting rates by 40% and wasting to less than 5% by 2025. Although Kenya is on course to meet the targets for these two indicators (stunting and wasting) more efforts are required to accelerate progress. Diet diversity is necessary to improve the nutritional quality of the diet (Arimond & Ruel 2004) and for this to happen the agricultural biodiversity must improve. A cross-sectional study was conducted in areas of low and high agricultural potential in Rongai Sub-county of Nakuru County. The locations that were sampled were picked randomly from among sub-locations in low agricultural potential areas (Kampi ya moto, Makutano, Kapsetek, Morop) and high potential areas (Ogilgei, Kamungei, Mangu, Mimwaita, Olrongai). Only households with children aged 6 to 23 months old and their mothers or caregivers participated in the study. The final number of participants were 161 for low potential areas and 227 for high potential areas.

Characteristics of the study population

Most households (81.9%) were male-headed and on average, a household had 5 members and the



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majority of the mothers interviewed had primary education (42.5%). The following categories of socio-economic status were considered in survey data analyses; poorest; poor; medium and rich. It was found that most households (61.8%) were in the poorest category. Only 3.2% of the households were categorised as rich.

Ten-year-old Irine family eating in her village in the Turkana region of Kenya.

“Diet diversity is necessary to improve the nutritional quality of the diet.”

Main findings

Food insecurity was widespread with disparities of malnutrition prevalence between the two types of study areas

The household food insecurity access scale was used to categorise households into four levels: food secure, and mild, moderate and severe food insecurity. Based on this, just under half of the population (47.9%) were identified as food secure while the majority (52.1%) fell into varying categories of food insecurity as reflected in Figure 1. The prevalence of food insecurity in the two agricultural areas was different and 62.9% of households in low potential areas compared to 44.4% in high potential were food insecure. Despite these disparities in food security, there were no differences in child malnutrition indicators between the two areas. Overall, 6.2% of children were wasted, 9.2 % underweight and 23.4% stunted and this is in line with national figures (Figure 2).

The majority of underweight mothers/caregivers were from low potential areas (19%) compared to only 7.1% from high potential areas (Figure 3). In contrast, more overweight and obese women were from high potential areas. Therefore, despite the high poverty levels and food insecurity, both areas are experiencing a double burden of both undernutrition and overnutrition.

Agro-biodiversity was not associated with diet diversity of mother/caregivers but other factors like male-headed households, smaller family, higher education, older age and larger cultivated farms were

Agro-biodiversity refers to the variety of all forms of life directly relevant to agriculture, including the crop varieties (cultivated or wild), and animal species (domesticated or wild). Agro-biodiversity is expected to influence the dietary diversity of the population in an area since people would be expected to have access to a wider variety of foods. Diet diversity in turn is an indication of diet quality. Crop diversity was higher in high agricultural potential areas compared to low potential areas while diversity of domesticated

“Both areas are experiencing a double burden of both undernutrition and overnutrition.”

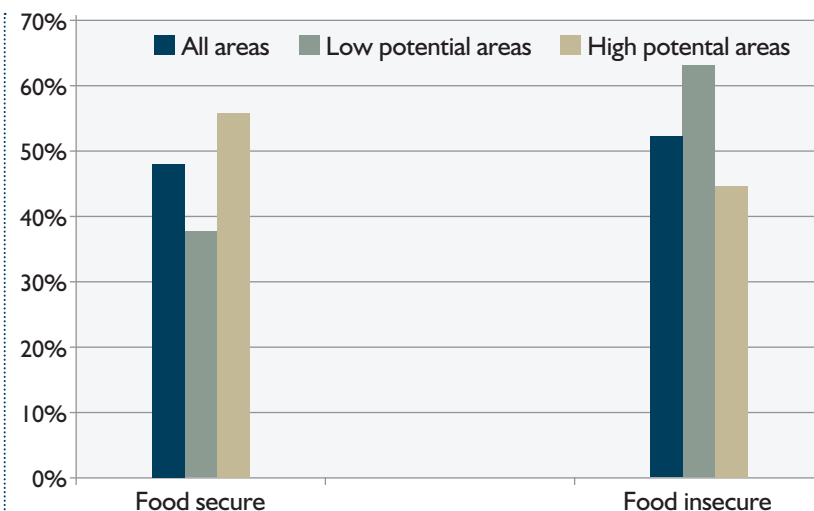


Figure 1 Prevalence of household food security in the two agro-ecological areas of Rongai sub-county

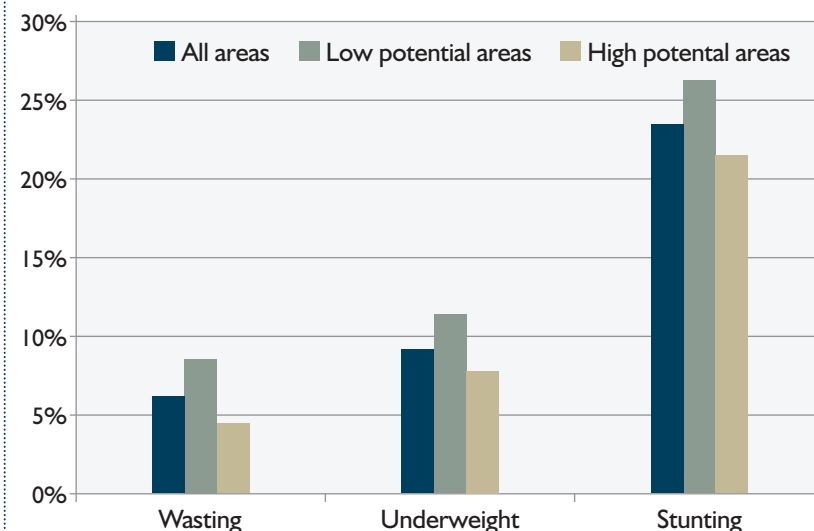


Figure 2 Prevalence of wasting, underweight and stunting in the two agro-ecological areas of Rongai sub-county

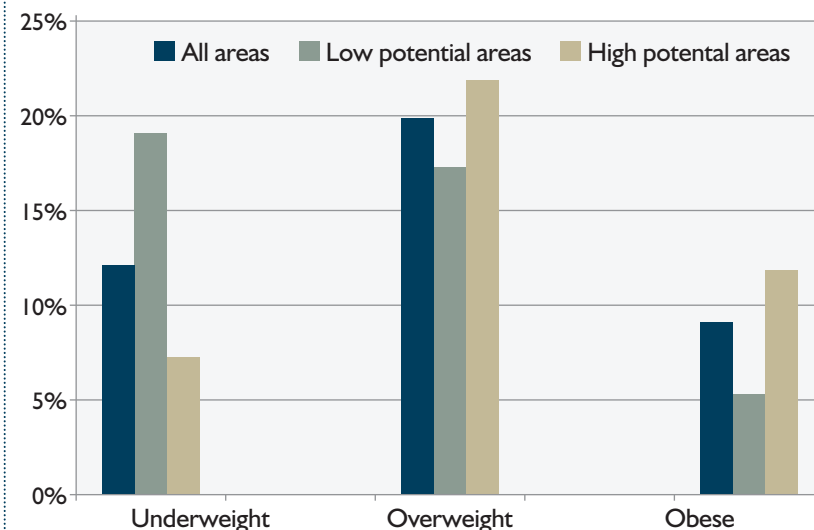


Figure 3 Nutritional status of mothers/caregivers in the two agro-ecological zones

animals, legumes and nuts was higher in low potential areas. However, maternal/caregiver diet diversity was similar. This indicates that agro-biodiversity was not associated with diet diversity as one would have expected. The average diet diversity scores were low. For an adequately diverse diet the score should be at least 5 out of a maximum of 10 food groups. Only 19.1% mothers/caregivers consumed more than the minimum desired of 5 food groups (Figure 4). A higher proportion who met the minimum adequate diet were from high potential areas (19.1%) compared to low potential areas (13.9%) but in general both areas still had low diet diversity. The study participants identified cultural practices as possible barriers to better diet diversity signifying that behaviour change communications should be an important consideration towards promoting better diet quality in these areas.

Factors associated with better diet diversity

The factors that were positively associated with better dietary diversity included;

- being from a male headed household,
- higher education,
- older age of mothers/caregivers,
- smaller family and
- larger cultivated farms.

How these factors are influencing needs to be better understood to leverage them for better nutrition. Other important factors that may influence diet quality were that many mothers/caregivers had little knowledge on infant and young child feeding (80%); on nutrition during pregnancy and lactation, (98%); on iron deficiency anaemia (93%); and on vitamin A deficiency (97%). With such high levels of limited knowledge, mothers may not be able to effectively leverage the available agro-biodiversity for better nutrition and health outcomes.

Agro-biodiversity was not associated with the children's diet diversity

The study also found that children's dietary diversity was similar in low and high agricultural potential areas despite the biodiversity differences. Out of the expected 7 food groups for children aged 6–23 months, most children consumed foods from at least four food groups. The minimum diet diversity

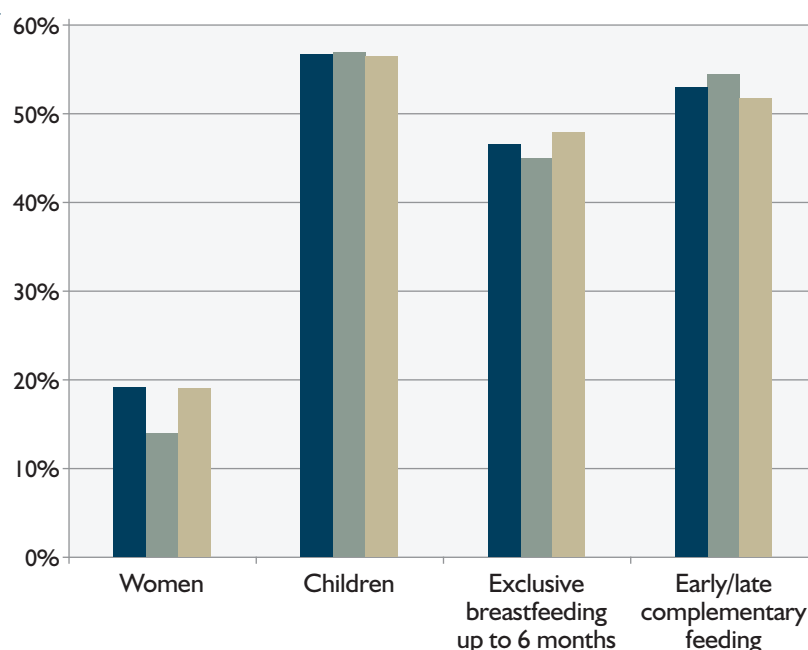


Figure 4 Proportion of women and children who met minimum dietary diversity, exclusive breast feeding rates and children introduced to complementary food early/late in Rongai sub-county

for this age group is 4 and more than half (56.9%) met the minimum diet diversity. Therefore, there may be an untapped potential to improve nutrition outcomes with greater knowledge of infant and young child feeding.

Children were introduced to complementary foods too early or late

Complementary feeding of infants was introduced too early or late (53.2%). Knowledge, attitudes and practices ratings among mothers/caregivers were found to be particularly poor. This points to possible entry points with nutrition education and behaviour change communication to improve infant and young child feeding in these communities.

Entry points identified for intervention

In addition to the findings of the research, the dissemination workshops with the small-scale farmers among the study population were also used as consultations to identify entry points for interventions to improve agro-biodiversity, maternal, infant and young child diet diversity. The entry points identified were mainly the need for extension services, nutrition education and behaviour change communication, and economic empowerment projects to improve economic access to better diet diversity.

“Behaviour change communication will be needed to ensure that available agrobiodiversity can positively impact both diet diversity and infant and young child feeding practices.”

Conclusions and recommendations



A researcher engaging smaller-holder farmers during one of the workshops to identify barriers, opportunities and entry points for interventions.

Although there were differences in agro-biodiversity characteristics between the two agricultural potential areas, this did not translate into differences in diet diversity for mothers/caregivers or children. The research suggests that:

- Behaviour change communication will be needed to ensure that available agrobiodiversity can positively impact both diet diversity and infant and young child feeding practices.
- There were some positive indications on the diet diversity of children 6–23 months and this should be reinforced with nutrition education on maternal infant and young child nutrition.
- Behaviour change communications is also needed to address the early introduction of complementary feeding in these communities.
- Cultural practices that may limit diet diversity should be addressed.
- The desired changes in diet quality will only become possible if the agro-diversity improves with a nutrition lens so this needs to be given attention in agricultural extension services.

Further reading

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Credits

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