Bridging the Gap: Engaging Adolescents for Nutrition, Health and Sustainable Development

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Anthrologica

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The polaroid photographs and drawings included in the report were produced by the adolescent participants. All participants provided full consent for their photographs, drawings and other images to be used in this research and related documents.

Key messages

- Adolescence is a time of significant growth and development. Addressing the nutritional needs of adolescents, particularly adolescent girls, is key to achieving the Sustainable Development Goals and ending malnutrition by 2030.
- Adolescents play a key role in their families' health and nutrition. They often have significant influence over a household's diet, buying and preparing food, cultivating the family land, and contributing financial resources.
- The unique role of adolescents means they can be effective agents of change to improve the health and nutrition of their families, peers and communities.
- Governments and development organisations should expand their perception of adolescents as a target for health, nutrition and development initiatives. They should recognise and harness the energy or adolescents and the important place they occupy in society in order to reach the Sustainable Development Goals.
- Adolescents' diets are driven by immediate needs. Food choices are influenced by the need for energy and to satisfy hunger, and by limited resources and convenience. The long-term consequences of diet are rarely a factor.
- Although many adolescents are attracted to food they consider to be novel, there are avenues to promote both traditional and fashionable foods that are healthy and nutritious and to align these foods with adolescent aspirations.
- Overcoming restrictive social norms is critical to improving nutritional status and wellbeing. This includes addressing sexual and reproductive health issues like early marriage and teenage pregnancy, and access to education.
- Girls and young women have heavy workloads that contribute to their high-energy expenditure and often limit the time they have available for other activities including school attendance, homework, socialising and recreation.
- In many contexts, ingrained gender norms mean that girls are not prioritised at the table, eat last or receive a smaller allocation of food. Yet gendered social norms affect boys as well as girls, and programmes should ensure that all adolescents receive appropriate provision.
- There is no 'one size fits all' delivery channel. Interventions should respond to the complex realities of an adolescent's life and, rather than being an additional burden, should be mindful of the conflicting responsibilities adolescents may have and be sensitive to their preferences and priorities. Adolescents should be engaged through multiple avenues or platforms that are mutually supportive and also engage key influencers.
- The nutrition, food and agricultural sectors should tailor interventions to better reach adolescents. Actors already engaging adolescents in other sectors should include nutrition in their activities.
- Adolescents should be actively engaged in the design, implementation and monitoring of interventions.
- 'Adolescence' is a dynamic concept and factors including age, life stages and responsibilities influence whether a person identifies themselves as an adolescent or not. This results in some adolescents excluding themselves from relevant programmes. Effective programming should engage groups as defined and understood at the community level.

Adolescent girl, Prey Veng, Cambodia

Foreword

We've all been there. You don't feel like a child anymore, but you're not yet an adult. You're torn between the traditions of your family and the desire for something new, at the crossroads between reliance and independence. For many of us, whether we spent our adolescence in cities or on farms, in poverty or wealth, this is nonetheless our collective experience.

In order to reach the youth that we as a development community serve, this experience of being 'stuck in the middle' – as described by many of the adolescents engaged in this research – can pose an enormous barrier. Such as when girls don't participate in the programmes we design for children because, even if they fall into the age range, as young wives and mothers they don't see themselves as children anymore.

We know, more or less, that we can find children at schools or new mothers at health clinics. But on any given day, adolescents who've left school are scattered across homes, informal workplaces, gardens, farms and so on. Reaching them is another kettle of fish.

But what if the factors that are keeping us from really addressing their needs are the very things that will help us not only improve their nutrition, but delve deep into entire communities?

When we first discussed the idea for this research with Anthrologica and Unilever four years ago, we couldn't have anticipated the range of insights it would give us. While we went in with a focus of how to reach adolescents, we came out with our eyes opened to the unique influence they could have in the household.

Many adolescents play an active role in providing food for the family – cooking, buying and earning money to buy food. They are more tech savvy than their parents (what adolescent isn't?), and they are exposed to different environments outside the household whose stimuli they absorb and bring back home. Children are told what to eat; adolescents are more likely to decide what to eat, based on the world around them. And if they make the right choices, they can influence the entire family.

The World Food Programme has long worked with adolescents – in school meals and with young mothers and mothers-to-be. Beyond these traditional groupings, this research gave us an opportunity to consider them as an entity of their own, discovering their fears, desires, motivations, how they see themselves, what language speaks to them, and how to involve them.

This research project is a result of 18 months of work, getting to know adolescents across diverse contexts in four countries to understand the differences and the common threads that unify all adolescents. It's our hope that the insights will help programmes designed for adolescents not only reach them effectively, but also engage them in a way that resonates and makes lasting and cascading change.

Let's use this precious moment, somewhere between childhood and adulthood, to influence the mindset of not only tomorrow's leaders and decision makers, but today's families and communities. If we don't do it, someone else will, and that would be our collective failure.

Lauren Landis
Director of Nutrition

Foreword

Adolescence is a critical time of growth and development, laying down many of the foundations for adult life.

Yet, supporting young people through this period remains complex, not least because the concept of adolescence – its responsibilities, length and even its existence – varies dramatically between countries, cultures and individual contexts.

As this valuable report shows, if we are to better serve adolescent populations – ensuring they get the resources and holistic programmes they need to thrive – we first need to understand the unique circumstances that shape their lives and influence their choices.

Through engagement with groups from multiple countries and backgrounds, Anthrologica and the World Food Programme have built up a rich picture of adolescence across different social, economic and cultural contexts.

These insights, such as the importance of peer-to-peer learning and making interventions entertaining, provide a useful resource to ensure policy, programme and product design are better tailored to adolescent needs.

The findings also highlight a clear opportunity for the private sector to use the power of its brands and communications channels, marketing and technological expertise to support partners in reaching adolescents in ways which resonate with them. Here, groups such as the Scaling Up Nutrition (SUN) Business Network can provide a useful entry point for private sector engagement.

Adolescents and youth make up around a quarter of the world's population. Put simply - they are the future. Ensuring they have the nutrition, education, healthcare and support systems to fulfil their adult potential is incumbent on us all.

At Unilever, we are grateful to have had the opportunity to support this thought-provoking research. Through our partnership with the World Food Programme and beyond, we look forward to continuing to support young people to help create a brighter future for all.

Rebecca Marmot
Vice President, Global Partnerships and Advocacy

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This is the synthesis report of the research conducted across four countries: Cambodia, Guatemala, Kenya and Uganda. It presents key findings, recommendations and considerations for policy and programming and accompanies a series of country-specific reports.

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Finally, and most importantly, we express our sincere gratitude to all the participants in this study for sharing their experiences and insights, and for giving their time so willingly.

Adolescent girls, Mungula I, Adjumani, Uganda

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Introduction

Background

Adolescence is a time of significant brain development (Blum et al., 2014) and physical growth at a pace exceeded only by the critical first 1000 days (Thurnham, 2013). As identified in Sustainable Development Goal 2, Zero Hunger, addressing the nutritional needs of adolescent girls is one of the key steps towards achieving the objective of ending malnutrition by 2030. The 2013 'Maternal and Child Nutrition Series' published by *The Lancet,* the Vision 2030 Sustainable Development Goal agenda, and the Scaling Up Nutrition (SUN) movement have each played a key role in highlighting that adolescent nutrition interventions should be tailored to girls. Interventions to improve access to education, delay marriage, and prevent early pregnancies can contribute to improving adolescent girls' nutrition so they can reach their full potential (Horton, 2013; SUN, 2016; Thurnham, 2013; Black et al., 2013; Finlay et al., 2011). There is, however, a lack of evidence to guide the development and delivery of strategic nutritional messages and interventions for this specific target group. More research is needed on the nutritional status of adolescents globally (Leenstra et al., 2005; Patton et al., 2016).

Research objectives

This research contributes to the global evidence base on adolescent nutrition. The four countries included in the study are Cambodia, Guatemala, Kenya and Uganda. Adolescents constitute nearly a quarter of the population in Kenya (22%), Guatemala (24%) and Uganda (26%), and 43% in Cambodia (CDHS, 2014; UNICEF, 2014; UBOS, 2016; MSPAS, INE, ICF International, 2017). In line with the global shift of attention towards adolescents, there is increased engagement and mobilisation of multi-sectoral actors around the adolescent agenda in each country. Against this background, the research had four overall objectives:

1. To assess the experiences, needs and priorities of adolescents regarding their nutrition.
2. To understand the policy and programmatic environment and current practices for effectively engaging adolescents.
3. To establish the preferences of adolescents regarding how they want to be engaged in programming.
4. To establish user-centred recommendations for more adolescent-friendly, context-specific nutrition interventions.

Methodology

The mixed-methods, collaborative study was conducted between March and December 2017. A country landscape analysis of adolescent programming recorded key stakeholders working with adolescents in each country, and categorised the focus, timeframe and location of interventions, the target group (age, ethnicity, gender), the modes of engagement and the key programme implementers. Eighteen stakeholder organisations working with adolescents were recorded in Cambodia; 40 stakeholder organisations in Guatemala; 47 stakeholder organisations in Kenya; and 28 stakeholder organisations in Uganda. A database of organisations was deposited with WFP at the conclusion of the study.

Formative qualitative research using participatory and creative methodologies elicited perspectives, experiences and suggestions from adolescents and their communities. Informed consent and assent was given prior to participation, and the study was granted ethical

Country	Total no. participants	No. adolescent participants*	No. of activities
Cambodia	280	178	130
Guatemala	399	249	158
Kenya	312	219	144
Uganda	312	210	144
Total	1,303	856	576

* In Cambodia and Guatemala, technology surveys also included youth, aged 10-25

clearance by the National Ethics Committee for Health Research in the Ministry of Health, Cambodia; the Social Science Faculty of Universidad del Valle de Guatemala; Kenya Medical Research Institute; and Makerere University School of Medicine in Uganda.

A total of 1,303 participants were included in the qualitative research and 576 data collection activities were undertaken, including focus group discussions, key informant interviews, technology surveys and participatory workshops with adolescents using a range of creative methodologies to document their voices (e.g. photowalks, graffiti walls, drawings, clay modelling). During the research, 856 adolescents were directly engaged (532 participated in the workshops, 320 completed the technology survey and, in Guatemala, four additional adolescents were interviewed). Both girls and boys participated in the study in each country, although in Cambodia, workshop participants were only girls. The full analysis of qualitative data used thematic analysis developed specifically for analysing data generated through applied research. Field sites in each country are detailed below. They include urban, peri-urban and rural areas, informal settlements, host and refugee communities, pastoralists, agriculturalists, and ethnic and indigenous minorities.

Research synthesis

This report synthesises the research conducted in Cambodia, Guatemala, Kenya and Uganda. It presents the nutritional profile and policy environment for each country, and discusses how adolescence is defined in different settings. Key cross-cutting themes are presented, and as trends varied within and across the four countries, certain local specificities are detailed. Themes are clustered around food and nutrition (food sources; diet and food consumption; food responsibilities; and food status and aspirations) and factors affecting adolescent

					Land typology				Major Livelihoods							
	Area	Research Site	Ethnic groups	Rural / urban	Arid / semiarid	Vegetation	Mountainous	Plains	Subsistence farming	Cash crop	Agricultural labour	Livestock	Construction labour	Shop / factory	White collar	Other Informal
Cambodia	Ratanakiri	Ta Veng	Multiple	Rural			●		●	●	●	●				
		Andoug Meas	Multiple	Rural			●		●	●	●	●				
	Prey Veng	Kampong Trabek	Khmer	Rural				●	●	●	●	●				●
	Phnom Penh	Chbar Ampov	Khmer	Urban				●	●	●	●	●	●	●	●	●
		Chroy Changva	Khmer	Urban				●	●	●	●	●	●	●	●	●
Guatemala	Alta Verapaz	Cerro Azul	Q'eqchi', Ladino	Rural		●	●		●	●	●					●
		Chisec	Q'eqchi', Ladino	Urban		●	●		●	●	●			●	●	●
	Chimaltenango	Xzetzizi	Kaqchikel	Rural	●	●	●		●	●						●
		Chimaltenango City	Kaqchikel, Ladino	Urban	●					●	●		●	●	●	●
	Chiquimula	Marasxo	Chorti, Ladino	Peri-Urban	●	●	●		●	●		●	●			●
Kenya	Nairobi	Ngomongo	Luo, mixed	Urban									●			●
		Utalii	Luo,Kikuya, mixed	Urban										●	●	●
	Samburu	Ndoto	Samburu	Rural	●		●					●				●
	Meru	Mikinduri	Meru	Rural	●	●	●		●	●	●	●				
		Maua	Meru	Peri-Urban	●	●	●		●	●	●					●
Uganda	Moroto	Atedeoi	Karamajong	Rural	●			●	●			●				●
	Karamoja	Katanga	Karamajong	Peri-Urban	●				●			●	●			●
	Adjumani	Mungula 1 Refugees	Madi,Dinka, Nuer	Rural		●			●		●	●				●
	West Nile	Mungula 1 Host	Madi	Rural		●			●	●	●	●				

nutrition (income-generation activities; climate and agricultural practices; social norms and restrictive food practices; security, substance abuse and alcohol; education and school attendance; sexual and reproductive health; and services delivery issues). In comparing and contrasting the country-specific studies, a number of core recommendations emerged: to strengthen the visibility of adolescents; to influence adolescent nutrition; to engage with adolescents; to identify platforms for engagement; and to maximise key entry points for strategic partnership. By combining the formative research findings and stakeholder mapping, evidence-based recommendations have been designed to improve nutrition-specific and nutrition-sensitive interventions for adolescents, and to highlight opportunities for adolescent engagement regarding nutrition.

Adolescent girls participating in the photowalk activity, Ratanakiri, Cambodia.

Country profiles

Nutritional status

Country	Stunting	Overweight	Anaemia (Women of reproductive age)
Cambodia	High	Risk factors	Very high
Guatemala	Very high	High	Moderate
Kenya	Moderate	Increasing	High
Uganda	Moderate	Increasing	High

At the time of this research, the nutrition status of each of the four countries was varied with different factors driving their nutritional profiles, some of which are explored in detail in this report. In all four countries, micronutrient deficiencies were highly prevalent, but whilst Cambodia and Uganda have high rates of undernutrition and Kenya has a moderate rate of undernutrition, all three have increasing rates of non-communicable diseases (NCDs) and obesity. Guatemala, however, has already transitioned into having a 'triple burden' of high rates of undernutrition, NCDs and obesity, and micronutrient deficiencies. In all four countries NCDs and obesity appeared to be on the rise and existing risk factors indicate further increases are likely over time. It should be noted, however, that data on the nutritional status of adolescents (10-19 years) are limited. Consequently, the country profiles presented below are largely based on the nutritional status of women of reproductive age (WRA) defined as women aged 15-49 years, and children under five.

Cambodia

Since 2000, rates of undernutrition in Cambodia have rapidly declined with stunting prevalence in children under five dropping from 50% in 2000 to 32% in 2014, although this is still classified as high prevalence by global standards (CDHS, 2000; CDHS, 2014). For WRA, rates of overweight and obesity have tripled from 6% in 2000 to 18% in 2014, and NCDs and obesity appear to be more prevalent in older women. Adolescents aged 15-19, however, are more likely to be too thin with 28% having a BMI of under 18.5 compared to 3% overweight (CDHS, 2014). Whilst rates of NCDs and obesity remain fairly low compared to other countries in South East Asia, risk factors exist that suggest they may become major issues in the near future. Risk factors include rapid urbanisation, an increase in the consumption of unhealthy snack foods and convenience foods, and the overconsumption of rice. Micronutrient deficiencies, in particular zinc and folic acid, are also a concern, and anaemia is high in both women and children, although recent research indicates that this may be attributed in part to non-dietary factors (CDHS, 2014; Perigno et al., 2016; Wieringa et al., 2016).

Guatemala

Guatemala has undergone the nutrition transition to become a 'triple burden' country, with very high rates of undernutrition, NCDs and obesity, and micronutrient deficiencies. Nearly 47% of children under five are stunted, whilst in some departments, such as Totonicapán, the rate increases to 70% (MSPAS et al. 2017). NCDs and obesity are also major concerns, with 52% of WRA (15-49 years) being overweight or obese (MSPAS et al. 2017). BMI increases with age, and 22% of adolescents aged 15-19 are overweight or obese (MSPAS et al. 2017). Micronutrient deficiencies are also prevalent across the country, although anaemia levels are mild in women and moderate in children. The high consumption of unhealthy snack foods/convenience foods and lack of physical activity makes it likely that negative trends associated with the triple burden will continue to worsen over time (MSPAS et al. 2017).

Kenya

In Kenya, the level of undernutrition is slowly decreasing and stunting levels in children under five have declined from 38% in 1998 to 26% in 2014, which is classified as moderate (KDHS, 2014). Micronutrient deficiencies remain high, however, and 25% of WRA are reported to be anaemic (KDHS, 2014). NCDs and obesity are also increasing in Kenya, and prevalence of overweight or obesity in women aged 15-49 rose from 25% in 2008 to 33% in 2014 (KDHS, 2014). Following a similar pattern to that identified in the other three countries in the study, BMI in Kenya increases with age, and 12% of adolescents aged 15-19 were reported to be overweight or obese (KDHS, 2014). Yet undernutrition remains a concern, with 17% of this age range classified as thin (KDHS, 2014).

Uganda

Uganda has a similar nutrition profile to Kenya, but at the time of the research reported higher rates of undernutrition and lower rates of NCDs and obesity, although rates of NCDs and obesity were rising. The rate of stunting in children under five decreased from 45% in 1988 to 29% in 2016 (UBOS, 2017). Again, this is classified as moderate. Micronutrient deficiencies are highly prevalent and the rate of anaemia is very high amongst children under five (53%) and high amongst women (32%). NCDs and obesity are also increasing gradually, with 24% of women aged 15-49 reported to be overweight or obese (UBOS, 2017). Of adolescents aged 15-19 years, around 11% are overweight or obese and 13% are thin (UBOS, 2017).

Policy environment

The policy environment and committed political will differed across countries. In some, there was a high level of visibility associated with adolescent-specific and -sensitive policy, and related structures had been established. In others, policy frameworks were in place but were not always fully implemented or translated into programming with high coverage, whilst in some, adolescents remained invisible and were not included in national policies or action plans.

Across the four countries, detailed information about how to reach adolescents as a specific target group remains largely restricted to the areas of sexual and reproductive health and HIV, where positive inroads have been made. The stakeholder mapping documented key international and national organisations working with adolescents, yet few dominant actors were identified as focusing on adolescent nutrition. This highlights that whilst there is a need to better understand all aspects of adolescent nutrition and to develop innovative approaches to effectively engage them on a broader range of issues, there is a corresponding opportunity to develop effective collaborative partnerships in this area.

Cambodia

Whilst there is no national strategy to specifically address adolescent health and nutrition, several policies and action plans are in place that incorporate adolescents as part of the broader population including the National Strategic Health Plan (NSHP), the National Nutrition Strategy (NNS), the National Policy on Youth Development (NPYD), the National Strategy for Food Security and Nutrition (NSFSN), the National Population Policy (NPP), and the National Action Plan for the Zero Hunger Challenge in Cambodia (NAP/ZHC). At the time of the research the government's priorities in nutrition were related primarily to the first 1000 days (pregnant and lactating women and children aged under two years).

Kenya

Kenya's Vision 2030 places young people, including adolescents, at the centre of the country's development agenda. The Neonatal, Child and Adolescent Health Policy and the Food Security and Nutrition Policy both highlight specific interventions for improving adolescent nutrition, and nutrition is one of eight key pillars in the National School Health Policy.

Guatemala

The National Development Policy 2032 (Ka'tun 2032), spearheaded by the Office of the President, advocates for the active participation of adolescents in the social and economic life of the country. The policy highlights the importance of education, employment opportunities and sexual and reproductive health services tailored to the needs of adolescents. In the National Strategy for the Prevention of Chronic Malnutrition 2016-2020, the elevated risk profile for overweight and obesity in adolescence is highlighted.

Uganda

A number of national policies address health and nutrition needs of adolescents, including the Uganda Nutrition Action Plan, the Uganda Multi-Sectoral Nutrition Policy, the National Anemia Policy, and the School Feeding Policy. Other policies of relevance, pending at the time of research, included the School Health Policy; the National Multi-National Sectoral Framework for Adolescent Girls; the Maternal, Infant, Young Child and Adolescent Nutrition Roadmap; and the renewal of the National Adolescent Health Strategy.

Q'eqchi' girl with her younger sister,
Cerro Azul, Alta Verapaz, Guatemala.

Defining and experiencing adolescence

Adolescence is commonly understood as the life stage between the end of childhood and the beginning of adulthood (Kaplan, 2004). Conceptually, the UN defines adolescence as spanning the age range of 10-19 years, although others argue for 10-24 years (Sawyer et al., 2018). Adolescence is a dynamic concept, both culturally and historically. The length, the progression and even the existence of adolescence as an interim life stage differ widely across cultures (Steinberg, 2014).

'*This is me in the middle*'. 12 year old boy, Meru, Kenya.

None of the four countries included in the research had a standardised definition or age range for adolescence applied across laws and policies, and there were marked disparities between the terminology adopted at the national level and community-level definitions of adolescence. It was clear that, conceptually, there was a distinct period of life that marked the transition from childhood to adulthood, although how that transition was defined, what triggered the entrance and exit between life stages, and the terminology used to describe it varied between countries and domestically. In Ratanakiri, Cambodia, for example, adolescence was described as a '*foreign concept*' and there was no word for adolescence or adolescent in local languages.

Age was rarely used to indicate different life stages at the community level. Adults and adolescents across the research sites identified adolescence as a period of physical and cognitive growth and in Cambodia, thoughtfulness, a girl's empathy for her mother, and growing respect for elders were also discussed. Physical changes were emphasised in all research sites, particularly the start of menstruation for girls and increasing strength for boys, and physical changes were often the trigger for social adjustments that shifted the position of an adolescent in his or her household and community (for example, signifying that a girl is ready for marriage). Socio-cultural markers dominated communities' definitions of adolescence including: circumcision and other initiation ceremonies (Kenya, Uganda); marriage and parenthood (all countries); growing levels of responsibility (all countries); and greater personal agency (all countries).

Increasing responsibilities for girls revolved around household chores, primarily sourcing, preparing and cooking food, and caring for younger siblings. Other common duties included fetching water and firewood, cleaning the home and washing clothes. Many of the adolescent girls who participated in the research discussed their heavy workloads and heightened responsibilities as difficult to manage, particularly if they had competing priorities such as school attendance. In the refugee communities in Adjumani, Uganda, where it was reported that household sizes were larger, the responsibility of adolescent girls for their siblings was particularly demanding. Adolescent girls and boys were also involved with farm work and income-generating activities (discussed in detail below), and in rural Guatemala a boy's maturity was measured by his ability to do hard physical labour. In Samburu, Kenya, adolescent boys (called *morans*, meaning warriors) assumed responsibility for the security of the community and for taking care of the cattle.

'*Here I am chopping corn*'.
14 year old boy, Alta Verapaz, Guatemala.

Being reliant on parents was often described as a marker of childhood, and fostering independence was therefore a key component of adolescence. In Nairobi, Kenya, particularly in informal settlements like Ngomongo, many adolescents '*hustled'* and had a high level of self-reliance. In Moroto and the host community in Adjumani, Uganda, growing independence was also a feature of adolescence, and peer living practices were commonly described, with boys and girls aged around 14 years starting to sleep communally in a building separate to their family structures. In contrast, stakeholders suggested that young refugees in Adjumani lacked opportunities to foster independence because of limitations in resources and freedom particular to their environment and given the small land plots families had been allocated. In several settings, adolescence was noted to be a time when youth became more interested in material assets and their personal appearance, and growing awareness and interest in the romantic or sexual relationships was universal.

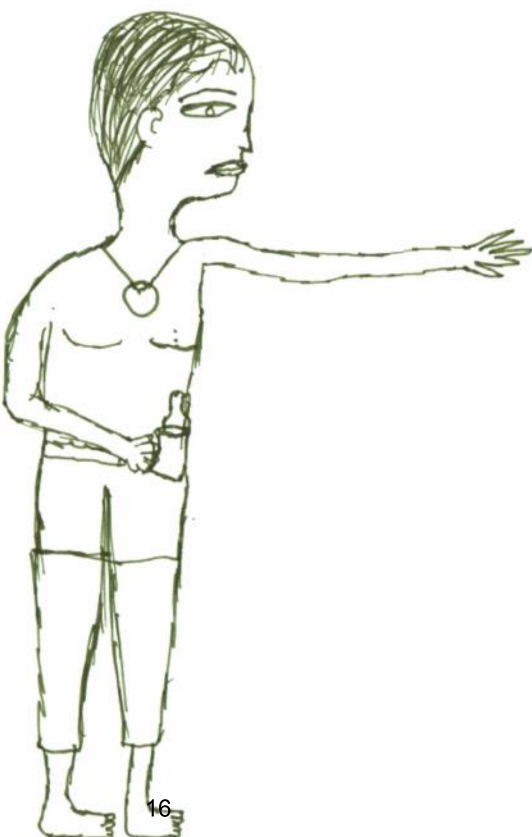
'*I am bigger and more knowledgeable than children*'. 11 year old girl, Prey Veng, Cambodia.

The transition from childhood to adulthood was a time when the paths of girls and boys diverged in all four countries. It was common for an adolescent boy's mobility and social world to expand, whilst a girl's mobility became constrained and her sphere of influence more restricted to the household (partly as a protective mechanism to avoid teenage pregnancy and increase security). The interim or transition period between childhood and adulthood was often perceived to be longer for boys than girls, given that girls often assumed increased responsibilities, including getting married and bearing their first children at a younger age. Yet markers of adulthood could be observed in individuals considerably younger than 18 years old, the legal age of majority in the four focal countries.

In all countries, it was noted that the conceptual juxtaposition of adolescence as defined in policy and the actual experience of adolescence could impede effective and efficient programme implementation. A percentage of adolescents in all four countries were found to exclude themselves from services aimed at '*youth'* and/or adolescents as they self-identified as adults (given that they were already married, had a child, were engaged in employed work and/or had assumed household responsibilities), despite being in the 10-19 age group.

'*This is me, in the middle, thinking*'. 12 year old girl, Prey Veng, Cambodia.

This drawing depicts the girl's brother to her left, with a traditional amulet necklace worn by children to protect them against evil spirits, and her mother to her right, wearing '*grown-up*' clothes and lipstick. Both family members are reaching out to the girl, highlighting the responsibilities she has within the family unit and emphasising her feeling of being '*in the middle*'.



Food and nutrition

Across the four countries, key cross-cutting themes related to food and nutrition were identified: food sources; food responsibilities; diet and food consumption; and food status and aspirations.

Food sources

Across the research sites, adolescents were exposed to different foodstuffs and sourced food in different ways, including through household production (farming, livestock rearing, fishing, foraging); local markets, shops, mobile vendors and food stalls; work or school; distributions; and, in Nairobi, scavenging from dumpsites. There are marked variations between urban and rural food environments, but other determinants, including gender, ethnicity, socio-economic status and livelihoods, also influenced food sources.

'Boy digging'.
Photo by 15-19 year old girl, Adjumani, Uganda.

Adolescents living in farming communities were often dependent on the local harvest. For the host community in Mungula, Adjumani, Uganda, for example, the fertile land was the primary source of food. Adolescents expressed great emotional attachment to their land, and in Mungula, digging was commonly documented in both their drawings and photowalks. The land was perceived not only as a source of food, but also in terms of its income-generating potential so that more varied foods could be purchased and households had more resources. Both adolescent and adult participants expressed great respect for the land and an appreciation of what it could offer. As one adolescent girl from the host community explained, '*you get a lot of food when you dig*'. Those with enough land could produce cassava, beans, cowpeas and other crops such as maize, which they could sell to buy rice, meat and fish. In Meru, Kenya, the majority of produce was grown to be sold. A small portion of land may be reserved to produce staple foods for the household, but most foodstuffs were purchased from the local market. Similarly, in Guatemala, farmers dependent on cash crop farming preferred to sell their produce at market, using the profit to purchase food for the household. In Ndoto, Samburu, Kenya, food could be purchased from markets and the trading centre, but the major food source was the community's livestock (cattle and goats), although herds were seriously depleted at the time of the study.

In Cambodia, sourcing food that was more diverse than '*just rice'* had economic and time implications, and varied by province. Caregivers in Ratanakiri suggested that they '*almost always*' had sufficient rice (and rice wine) for family consumption because of their household rice fields, but the availability of all other food stuffs was highly dependent on the time of year and the family's current financial situation (e.g. whether or not they could afford to purchase vegetables to supplement their homegrown produce). Food in Ratanakiri was primarily sourced from subsistence agriculture, although some items were also foraged from forests, and river fish was considered the most significant source of protein. In Prey Veng, many communities had established fishponds or larger fish farms with assistance from local NGOs to provide families with a source of fresh fish throughout the year. Participants commented, however, that the construction of dams in Vietnam had restricted water flow and fish migration to the Mekong River, resulting in depleted local fish stocks. Community leaders concluded that the consumption of fish had declined in recent years because the catch was often insufficient to feed a family. Fruits, vegetables and occasionally meat, were commonly sourced from mobile food vendors or local markets. In Phnom Penh, foodstuffs other than fruits and herbs grown at home were typically purchased from mobile sellers, particularly during the dry season. Although markets in Phnom Penh were comparatively accessible to women and girls (due to their proximity and the

'You get a lot of food when you dig'.
13 year old boy, Adjumani, Uganda.

'*Woman selling fruit and soda by the school*'. 15-19 year old girl, Prey Veng, Cambodia.

'*Boy fishing in a small pond*'. Photo by 10-14 year old girl, Prey Veng, Cambodia.

'*Food my mother buys at Chisec market*'. Photo by 15-19 year old girl, Alta Verapaz, Guatemala.

'*Selling eggs*'. Photo by 15-19 year old girl, Moroto, Uganda.

availability of transport), women preferred to buy their food from a selection of '*trusted'* mobile sellers. This was seen to be more convenient and required fewer resources (in terms of time expenditure and out-of-pocket costs) than going to market.

Across the research sites, it was evident that shops in rural areas were particularly frequented when harvests failed and other food sources were unavailable. Food scarcity and food insecurity were common in all the communities engaged in the research, particularly when harvests failed, the price of crops fluctuated, and drought threatened livestock. Then, because of households' limited financial resources, the cheapest goods were most commonly bought and consumed. These tended to be foods that were energy dense, high in refined grains, added sugar and fats, but poor in protein and essential minerals and vitamins.

Food was described as the largest expenditure of household income in Nairobi, Kenya. As a religious leader in Ngomongo asserted, '*although you're working hard, whatever you earn you spend on food*'. In both Ngomongo and Utalii, all household members, including adolescents, bought a large proportion of their food from roadside stalls, and only a few dishes were described as being '*truly home-cooked*'. Poor household storage facilities prevented food from being prepared ahead of consumption, and this contributed to the preference for street food. In urban areas in Guatemala, cheaply produced and pre-prepared '*fast'* foods were also widely available from shops, food carts and (small) supermarkets and were relatively affordable even for the poorest households. Similarly, in both Phnom Penh and Prey Veng in Cambodia, children and adolescents with '*pocket money'* were likely to have access to multiple food sources beyond what was prepared at home. Those attending school could choose from numerous food vendors who set up their food stations and snack shops outside the gates of primary and secondary schools. Girls in Phnom Penh also had access to 'mobile restaurants', vendors with small portable grills attached to their motorbikes on which they produced a variety of foods from waffles to grilled meat. They also frequented shops that sold shrimp and rice crackers, sodas and energy drinks, bags of chips, and assorted meat products that were designed to appeal specifically to children and adolescents (e.g. brightly coloured meatballs dyed pink, blue and green).

In the informal settlements in Nairobi, the food culture reflected the '*hustling'* lifestyle, being disorganised, uncertain and unregulated. Adolescents in Ngomongo described the common practice of scavenging the food discarded from airports, rich estates and hotels that was trucked to dumpsites. From as young as eight years old, young people made decisions to trade hygiene and personal safety to acquire food. Having found food, adolescent girls reported, '*we don't wash it, we just wipe it*' asserting that they rarely became ill because '*our stomachs have adapted to it*'.

Across the four countries, adolescents engaged in work reported that they were sometimes provided with food by their employers (discussed further below), and for school attendees in certain sites in Kenya and Uganda, school meals provided by WFP and/or the government and supplemented by produce from small school gardens were an important source of food. In Adjumani, Uganda, amongst the refugee community in Mungula, one of the main sources of food was rations provided by external stakeholders (e.g. international organisations including WFP).

Food responsibilities

'*Even at night, when I am sleeping, I don't have peace. I sleep thinking what the family will eat the next day. So, I wake up at 4am to go for firewood, to make sure the younger children have something to eat'*.
17 year old girl, Moroto, Uganda.

Across the research sites in all four countries, adolescents in both urban and rural settings played a key role in sourcing and preparing food for their households, and often had a high level of responsibility for their own food consumption. In general, the male household head, if still residing with the family, was responsible for providing money to purchase food, whilst the mother or main female caregiver had oversight of sourcing and preparing food. In Guatemala, gendered roles in terms of food preparation and allocation were reflected by all, but particularly indigenous, adolescent participants. Whilst household funds were usually pooled, it was the women and girls who sourced foodstuffs and prepared meals and, from early adolescence, girls were required to help their mothers. Boys were expected to help their fathers with income generation or on the farms, although in all countries both girls and their mothers also worked on the land.

In Kenya, many women had assumed greater roles in earning money to contribute to the household budget, yet female family members were still expected to cook. In Meru, the main female caregiver prepared food, often with the help of adolescent girls, who sometimes took the lead in preparing meals if they were not at school, or at the weekend. In Samburu, unmarried adolescent girls were involved in buying and preparing foodstuffs, occasionally helped by younger adolescent boys. In Nairobi, one girl confirmed, '*I have a big brother, but if I am around, he cannot cook. If I am not there, then he cooks*'. Married adolescent girls and mothers were responsible for buying and preparing food for their husbands and children.

Similarly, in Uganda, participants explained that '*if food is to be eaten at home, that is left to women, men don't consider it an important aspect*'. In Moroto, it was common for the eldest girl in the family to prepare the food, overseen by her mother or female caregivers, a duty frequently depicted in the drawings made by adolescents during their participatory workshops. They suggested that the recent drought had made mothers and female caregivers '*busier*', thus placing a greater responsibility on adolescent girls, particularly in relation to preparing meals. In Adjumani, the mother or main female caregiver was likely to decide what to buy, whilst adolescent girls could be sent to market to actually purchase food. The majority of the cooking was carried out by women and girls, and for child-headed households in the refugee community, the responsibility for food sourcing and preparation fell to the eldest girl.

Cambodian women and girls were responsible for harvesting, purchasing and preparing most of the food required by their families. Preparation of rice is the domain of women, and adolescent girls across all research sites knew how to cook it. Often, more rice was prepared than could be consumed, and it was typically cooked and stored in a large pot so that every family member, young or old, male or female, could take as much as they cared to eat. In Ratanakiri, the multiple and time-consuming responsibilities associated with food production were seen to dominate the daily routine of women and girls. They often listed '*cooking rice'* as one of their more difficult daily chores, due in part to the large quantities of rice that had to be prepared for each family meal and the physical requirements of collecting water and firewood to cook it. Cooking was often described by adolescent school girls in Ratanakiri as a solitary experience, as many had to prepare a meal for themselves after school whilst their families were working on the farms. In contrast, adolescent girls in Phnom Penh and Prey Veng articulated more positive experiences of cooking. They had a wider selection of recipes in their repertoires and were more knowledgeable about selecting and using multiple ingredients, due to increased access to and affordability of a wider selection of foods. Being able to produce a range of flavorful side dishes was viewed as a sign of girls' increased maturity and growing ability to help their mothers and grandmothers with dinner preparations.

'*This is me preparing food*'.
14 year old girl, Alta Verapaz, Guatemala.

Differences in food consumption patterns between urban and rural areas and across different population groups were due to a combination of affordability, availability, preference and social norms. In general, however, the diets of participants across the four countries were limited in quantity, diversity and overall quality.

In many of the field sites, meat was rarely consumed. In Ngomongo in Nariobi, Kenya, adolescents ate '*reject*' food including *anyona*, the off-cuts of factory bread that are bagged and sold on the roadside; *chafua* (meaning '*dirty'*), a soup made from the juice of beans; and collard greens or *sukuma wiki*, which means '*push the week'* due to their cheap price and ability to keep families fed when money for food is scarce. In Moroto, Uganda, adolescents described most commonly eating a meal of green vegetables, boiled or cooked with onions, tomatoes and oil; *posho*, a mix of sorghum flour, water and oil cooked into a thick paste; and beans if they have been harvested, or, if they can be afforded, bought in the market. Even in areas that depended on livestock, meat was rarely consumed. In Samburu, Kenya, the daily diet suggested an overconsumption of certain food groups such as starchy carbohydrates like *lochoro*, a mixture of flour and water. Ceremonies such as circumcision and marriage that were held a several times per year were viewed as the few occasions when everyone, regardless of personal wealth, could eat meat. Similarly, in Uganda, when an animal was slaughtered for a ceremony or ritual, the whole community would receive a share, except for the animal's head which was given exclusively to male herders and adult men. In Ratanakiri, Cambodia, the household consumption of meat (buffalo, beef, pork) was, again, almost entirely dependent upon the '*spiritual distribution'* of food following an animal sacrifice.

Many adolescents described having a uniform diet, often eating the same meal multiple times each week or, in some cases, every day. In Kenya and Uganda, this extreme monotony was often perceived negatively by adolescent participants, in contrast to Cambodia and Guatemala where staple foods (rice and corn respectively) held great social significance.

In Cambodia, rice was the most important agricultural commodity and the staple of the national diet. The concept of a meal was synonymous with eating rice, and rice was consumed at every meal prepared in the household. It was notable that when asked to list their daily food intake, participants frequently failed to mention rice due to their perception of it as a constant and guaranteed staple. Participants defined a nutritious meal as being a meal with '*balanced'* flavors that in addition to rice involved both wet (e.g. soup) and dry (e.g. fried or grilled meat) food categories. To accompany the rice, participants described preparing multiple dishes referred to as '*side dishes'* (including fish and vegetables), when they could afford to do so.

'*Tortillas each day, every day'*.
Photo by 15-19 year old girl,
Alta Verapaz, Guatemala.

Similarly, in Guatemala, where the consumption of maize or corn is ubiquitous, participants did not always identify the cereal as an integral part of their daily diet until probed further. Adolescents confirmed eating a corn-based product multiple times a day, every day, preferably in the form of corn tortillas which they supplemented with beans and eggs (if available), to make a typical Guatemalan meal. Adolescents in rural areas ate more fruit and vegetables more regularly, whilst urban adolescents more frequently reported eating meat (beef, chicken and processed meat such as hotdogs) during lunch than did their rural counterparts, who rarely consumed meat. In indigenous communities in Guatemala, food from the '*tierra*' (land) was seen to be *'natural'* and thus was good for health. Food purchased from shops and food that was not prepared by '*mothers at home'* was not seen to be '*natural'* and was therefore unhealthy. Often food from shops and fast food restaurants was perceived to be '*chemical'* yet was still attractive to adolescents as it was linked to social status (discussed further below). Various foodstuffs were classified as '*chemical food'* and therefore potentially harmful to '*a*

person's body', including energy drinks, fried chicken that was not prepared at home, frozen chicken sold in shops, all canned food and, particularly relevant for adolescents, snacks (e.g. salted tortilla crisps) sold in colourful packaging, soft drinks and candy. Guatemala has a strong food processing industry that, through effective marketing and distribution, has made snack food only '*an arm's length from desire*' (Nagata, 2010). Caregivers engaged across the field sites expressed their concern about the availability of so much '*bad'* food near schools. Snacking was seen to be an issue facing older adolescents, both those in school who were given pocket money because they were not eligible for school feeding programmes, and those who had left education. The consumption of unhealthy, fatty and sugary food was particularly common amongst urban communities and, increasingly, the rural poor.

'*Snack vendors outside the primary school*'. Photo by 15-19 year old girl, Prey Veng, Cambodia.

The concept of '*bad'* food that was '*full of chemicals*' was also expressed by participants in both Phnom Penh and Prey Veng who emphasised that they did not trust vegetables sold in larger markets. This idea was echoed by adolescent girls who had been taught by their mothers and grandmothers to avoid purchasing vegetables from such markets. Caregivers also associated '*bad'* or '*unhealthy'* food with markets where imported foods (e.g. from Vietnam) were sold. Although caregivers found it difficult to explain why they did not trust '*foreign'* food, the general assumption was that if people in the food's country of origin did not want to eat it, but instead had vendors transport their products to sell in Cambodia, then it must be '*bad'* food.

In Kenya and Uganda, adolescents generally perceived healthy or good food to be food that provided energy, was filling and was natural. In both countries, some adolescents emphasised the need for a range of food types and thus appeared familiar with the concept of a varied diet, but many agreed that money (purchasing power) was more important than knowledge about what to buy. It was suggested that during times of serious drought and elevated food insecurity, perceived nutritional value did not drive consumption. Instead, food was eaten simply to satisfy hunger and provide energy. In the sites where boys were occupied with herding livestock (Samburu, Kenya and Moroto, Uganda), they were more likely to have a morning and evening meal, but had the smallest range of food options during the day. Many adolescents across the other field sites in Kenya and Uganda reported going without food in the morning, whilst others described eating leftovers from the night before for their breakfast. Adolescent boys in Nairobi admitted feeling shame when they could not source food for different meals.

'*There is no need for us to allow food to be thrown away whilst we are starving*'. 18 year old girl, Nairobi, Kenya.

Food status and aspirations

Adolescents in all research sites emphasised the importance of having energy and spoke of being attracted to food that was filing and '*fuelling*'. For many, however, food consumption was not only about sustenance; it was also imbued with social significance linked to status. In Cambodia, for example, the more side dishes consumed during a meal, the more '*well-off'* or food secure a family was perceived to be.

Food aspirations were thrown into sharp relief in Ngomongo and Utalii in Nairobi. Adolescents recognised that whilst they lived in one of Africa's most developed cities, they were themselves entrenched in poverty. Being linked to wealthy Nairobi through geographical proximity and through objects on the dumpsite, adolescents saw and literally tasted '*the other side*'. Adolescents listed food they desired including cakes, pizza and other items perceived as '*rich people food*', even if they could only acquire them from the dumpsite. A sense of shame and injustice was strongly intertwined with

descriptions of eating other peoples' '*trash*', and adolescents were aware that they were making an emotional trade-off to source food at the dumpsite, but stressed it was their best option, *'we just have to eat it*'.

'I want meat and milk.
I don't want dodo
[leafy green vegetable]'.
12 year old girl, Moroto, Uganda.

Participants in Samburu, Kenya, expressed boredom with their uniform diets and wished for more diversity in their food. Married girls and *morans* confirmed a preference for the food they *'grew up liking*'. Adolescents in school, however, discussed their aspirations for spaghetti, chapatti and rice, all foreign foods that were novel and different to their normal diets. Similarly, in Meru, Kenya, adolescents prioritised their desire for foods that were novel, fast, energy-giving, filing and '*fashionable*' although '*traditional*' knowledge about healthy foods, passed down orally between generations, also held significance for adolescents.

In contrast, the limited availability of food in Moroto, Uganda, meant that choice was rare, and many adolescents suggested that they could not risk expressing a preference for different foods but rather had to focus on sourcing any food. As one adolescent girl explained, '*every day we eat greens and posho. It's entirely dependent on availability of food, or availability of money to buy food*'. The only desired food items were additions to the routine diet, such as tomatoes, onions and cooking oil to give the green vegetables a '*nice taste',* and beans for protein. Livestock represented more than just a food source in Moroto, and ownership was a powerful symbol of status. Older adolescent boys who were based in the *manyatta* (village) in order to attend school expressed nostalgia for herding animals in the *kraal* (pasture area). Their lack of access to animal products such as meat and milk was keenly felt by many *manyatta*-based adolescents who perceived these to be the most nutritious and '*energy-giving*' foods. A number of '*treats*' were mentioned by adolescents and their caregivers, including *mandazis* (fried dough), sweets and cakes, but these were more accessible in the peri-urban areas, close to trading centres.

Adolescent refugees in Mungula, Adjumani, Uganda, expressed preference for '*traditional*' foods according to their cultural backgrounds. Whilst they suggested that traditional food and meat gave the most energy, they also expressed nostalgia for their homeland through their food preferences. Adolescent refugees were vocal in their dislike of the food they ate regularly, particularly staple green vegetables. During the time of data collection, the content of rations supplied to refugees in Mungula included oil, beans, maize and sorghum, but the portion of rations had recently been reduced. Because of the scale of the operation, rations needed to be uniform and cost effective, but adolescents confirmed the diet to be limited. As one adolescent boy concluded, *'now we are eating these things by force which are not in our heart*'.

'*I like to eat the pollo dorado*
[golden fried chicken]'.
Photo by 15-19 year old girl,
Alta Verapaz, Guatemala.

In Guatemala, adolescents who did not eat fast food, either because they could not afford it or did not have access to it, were vocal in their aspirations to do so. Being able to eat fast food was perceived as a sign that a family had middle- or upper-class status. Adolescents in the participatory workshops in rural areas '*dreamt'* of eating fried chicken in fast food restaurants, and adolescents from poorer economic backgrounds looked forward to consuming soft drinks on special occasions such as birthdays, graduations and weddings. Adolescents confirmed that if they did have spending money, they would use it to buy food that would not normally be eaten at home. They discussed the sense of independence this gave them, and some identified it as an opportunity to make decisions free from the restrictions of their caregivers or other influencers. They indicated that they purchased snacks because of the taste ('*it just tastes good'*), notions about the food ('*it gives us energy'*), and peer pressure and social acceptance ('*we all buy it'*). Adolescents in rural areas also reported buying snacks because they were convenient ('*you don't have to prepare it'*).

Factors affecting adolescent nutrition

Across the research sites in the four countries, seven interrelated themes were found to influence adolescents' access to adequate and healthy food: income-generation activities; climate and agricultural practices; social norms and restrictive food practices; security, substance abuse and alcohol; education and school attendance; sexual and reproductive health; and service delivery issues.

Income-generating activities

Lack of funds was often raised as a significant barrier to purchasing food, and many adolescents who participated in the research across all four countries were engaged in income-generating activities to contribute resources to their household economy. Participants discussed income-generating activities synonymously with household responsibilities, highlighting the expectation that children and adolescents had to work. As a teacher in Uganda concluded, '*children are used for survival purposes*'.

In Cambodia, labour law states that the minimum age for wage employment (of up to 48 hours per week) is 15 years old, although children aged 12 to 14 years may legally engage in '*permissible'* work that lasts less than 12 hours per week. The International Labour Organisation reported that in 2012, there were approximately 755,000 economically active children aged 5 to 17 years old in Cambodia, 50.7% of whom were girls (ILO, 2012). In Uganda, the Employment Act provides clear guidance on what constitutes child labour and the conditions under which individuals aged 14 to 17 years may engage in gainful employment without infringing their rights or putting their lives at risk. Participants confirmed that children were important income generators from as young as seven years old, and the Uganda Bureau of Statistics estimated that 4.3 million children aged 6-17 years were economically active in 2011-2012 (UBOS et al., 2013). In Kenya, the Employment Act, Part VII, provides protection against child labour. The number of children aged between 5 and 17 years working in Kenya has been estimated at 1.01 million, 47.1% of whom are girls (KNBS, 2008). In Guatemala, regulations are in place to protect children from child labour, although the Labour Code authorises children under the age of 14 years to work under '*exceptional circumstances'* including household poverty. It has been reported that close to 200,000 children aged between 7 and 14 years old are engaged in income-generation activities in Guatemala although this is likely to be a low estimation (Understanding Children's Work Project, 2016). Across all four countries, some adolescents confirmed that it was necessary to lie about their age or acquire false identification documents when seeking employment, whilst others suggested there was no need to hide their age as, despite the legislation that was in place to prevent them working legally, employment remained commonplace for their age group.

Although some of the work undertaken by participants engaged in the research was formal employment, including factory work in Cambodia and cash-crop farming in Guatemala, the majority of income-generating activities were informal and piecemeal and often led to exploitation, control by middle-men and elevated risk. The table below details activities undertaken. This is not an exhaustive or comprehensive list of income-generating activities, but presents the activities that adolescents and other participants discussed in each country. Many required intense physical exertion, and it was clear that the majority of adolescents were unlikely to make sufficient money to purchase enough food to balance the energy deficit. Only a small proportion were provided with a meal by their employers. Participants in Chimaltenango City, Guatemala, for example, confirmed that they were usually given lunch and discussed eating cheap noodles (imported from China) and meat with adult employees. These

	Cambodia		Guatemala		Kenya		Uganda	
	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys
Washing plates / clothes			■		■		■	
Washing cars								●
Babysitting			■		■		■	
House girls / domestic work			■	●	■		■	
Scavenging (plastic, metal)			■	●	■	●		
Collecting, selling firewood		●	■	●	■		■	
Making, selling charcoal					■		■	
Brewing, selling alcohol	■				■		■	
Cooking, selling street food			■			●		●
Selling water			■	●				●
Work on construction sites		●		●		●		●
Work in stone quarries				●		●	■	●
Work in open cast mines				●			■	●
Work in factories	■			●				
Agricultural labour	■	●	■	●	■	●	■	●
Driving motorbike taxis								●
Security guard								●
Prostitution	■		■		■			

■ - Girls ● - Boys

adolescents emphasised the importance of their midday meal at work and confirmed it was often the most nutritious meal that they would eat in a day.

Economic migration was discussed in both Cambodia and Guatemala. In Cambodia, most migration by girls and women was domestic, associated with seeking work in the garment factories, whilst men also migrated to neighbouring countries (e.g. Thailand) to work in construction. Across the field sites in Guatemala, participants confirmed that it was common for men and boys to leave their communities to seek employment opportunities, often as a result of failed harvests (discussed below). For a young male adolescent migrant, moving away from home (i.e. leaving his wife and other female relatives) often meant not having access to healthy home-cooked food, but resorting to purchasing cheap food '*on the go*'. Female relatives left at home had to manage the household budget whilst the main income generator was away and it was frequently reported that in order to have sufficient resources to buy food, they had to borrow money or undertake piecemeal work in addition to their heavy housework. Many men and boys moved within Guatemala to work on the palm oil or banana plantations, or in the construction industry as unskilled workers, but participants also reported high levels of migration to neighbouring countries including El Salvador and Honduras. Many participants dreamt of migrating to the United States in order to '*find a better life'*. One 16 year old boy in Chimaltenango who wanted to migrate but did not have sufficient money to pay the '*coyote'* (person smuggler) explained, '*in the United States you gain dollars, whilst here money is not enough. There you don't earn beans, you earn meat*'.

Climate and agricultural practices

In many of the research sites, the effects of climate-related vulnerabilities were evident, but particularly in more rural communities where livelihoods were dependent on the land and alternative income-generation activities were limited or non-existent.

Many adolescents involved in the study came from households engaged in small-scale subsistence farming and attributed poor harvests to changing weather patterns related to climate change. As a result of the failed harvests, less fresh produce was available for direct consumption, household resources were negatively affected by fluctuation in crop prices, and there was less money for purchasing food. In Guatemala, adolescents confirm that with less opportunity to harvest fresh produce, they often resorted to purchasing cheap, unhealthy and processed foodstuffs including canned goods and *fideos* (imported noodles). Indigenous communities reported feeling '*sad*' when they were not able to eat food produced '*from the mother earth*', particularly as this was the food eaten by their ancestors which therefore held spiritual significance for them.

In Ratanakiri, Cambodia, the land available for family farm activities had been reduced due to logging, plantation monocultures (e.g. palm oil), and government appropriations for conservation. This had resulted in changes to the traditional shifting cultivation practices, shorter rotational periods for crops, and depleted soil nutrients. In Prey Veng, mechanisation of crop harvests, including rice, had reduced heavy agricultural workloads for women and older girls, yet in Ratanakiri, weeding family farmland remained the responsibility of women and girls, and participants confirmed that despite their intensive labour, crop yields were less and the varieties of food grown more limited than in the past. Reduced forest cover and upriver dam projects were also associated with reduced access to animal and fish resources for foraging activities.

In Kenya, climate issues were highlighted by adolescent participants in both Samburu and Meru, where recent bouts of dry weather had resulted in poor harvests and low-quality yields. In Samburu, adolescents noted that because of the drought, the health of their livestock was threatened, animals were producing less milk and less meat was available for consumption. In addition to affecting the community's nutrition status, weak livestock also exerted a significant emotional and psychological impact on the community.

In Moroto, Uganda, adolescents discussed similar issues and highlighted that the lack of available water and pasture had led to elevated rates of animal deaths, reducing household assets at the very time that families needed to sell livestock to buy food from the market. In their participatory workshops, adolescents photographed the barren land and empty granaries as important features of their lives. They confirmed that the lack of rain was compounded by poor post-harvest storage practices, and in Adjumani, adolescents from the host community also highlighted challenges linked to lack of seeds and farming tools, and limited knowledge about farming methods including irrigation and crop rotation. In their photowalks, adolescent girls in Adjumani documented pest infestations such as army worm, described by caregivers as being a '*disaster*' for their crops. One of the main issues emphasised by participants in Adjumani was land ownership and access. Adolescents from the refugee community explained that the plots of land they were allocated were too small to produce sufficient food to supplement rations. They reported that landlords often reclaimed their land when it had been prepared for harvest or was yielding produce, or asked for payment for the land loaned. It was notable that in Guatemala, participants also identified limited land ownership as a key cause of economic hardship that left households and communities open to shocks and stresses.

Water scarcity not only affected harvests, but also increased the burden women and girls faced in cooking and maintaining the household. In Guatemala, indigenous girls and women in rural areas reported having to walk longer distances to find firewood and source water. In Moroto, Uganda, adolescent girls who made charcoal noted that they had to walk up to 50km to find the wood and then sell it in town. Many expressed concern that producing and burning charcoal damaged the environment but noted that it was an important source of income so the activity would likely continue.

'*Boy with carcass*'.
Photo by 15-19 year old girl,
Samburu, Kenya.

'*A picture of thirst*'.
Photo by 10-14 year old girl,
Moroto, Uganda.

'*This is our drought*'.
Photo by 10-14 year old girl,
Moroto, Uganda.

'*The granaries are empty*'.
Photo by 10-14 year old girl,
Moroto, Uganda.

Social norms and restrictive food practices

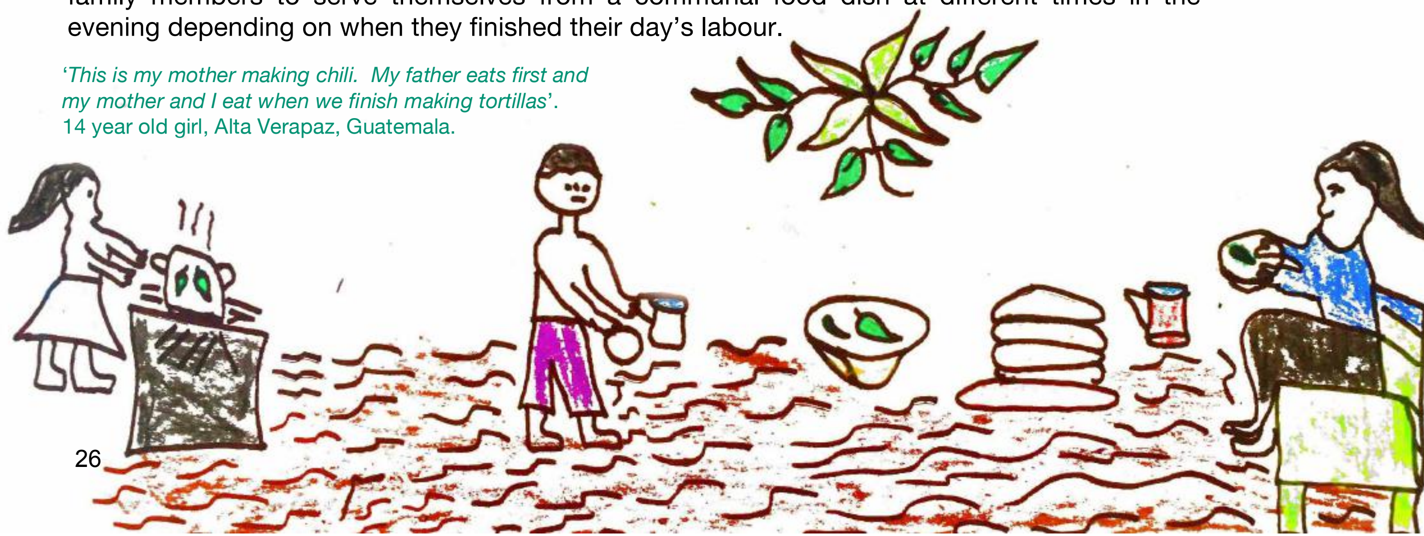
A number of social norms and restrictive food practices emerged as factors affecting adolescents and their access to adequate nutrition. Across Guatemala, Kenya and Uganda, there was general agreement that boys ate more than girls. In Uganda, a common narrative amongst male participants was that girls, who did most of the cooking, '*tasted*' the food whilst they were preparing it, so were expected to eat less during meal times. In Moroto, female caregivers described being responsible for dividing the food and deciding who eats what, but as a number of adolescent girls explained, '*men usually eat first and they eat without fear'*.

Gender-specific eating practices were also evident for boys in Kenya. In Samburu, for example, a boy could no longer eat food prepared by his mother following his circumcision. He was prohibited from eating in front of women and had to eat in the company of at least one other circumcised boy. Although it was less common in Meru, some circumcised boys ate separately, for, as a community leader in Mikinduri confirmed, '*the boy can no longer enter the mother's kitchen. He starts shying away from his mother, he cannot tell her directly that he is hungry, he can't show her his weakness'*. Across the field sites, it was agreed that male members of the household ate first and larger portions of food. Adolescent boys were generally given more than girls because they were perceived to be stronger and had greater needs associated with protecting the family and doing more physical household chores such as fetching water. Despite their heavy workload, female caregivers and girls were allocated less food at meals and often ate last, although in Utalii, Nairobi, caregivers suggested that it was more common for girls than boys to snack between meals.

In rural areas in Guatemala, men and boys usually received larger portions and '*better'* food '*for strength'*. In describing her drawing (see graphic below), an indigenous Q'eqchi' girl in Cerro Azul explained that when she and her mother had prepared tortillas, they would first serve the men, and then they would eat. Even when girls were pregnant or breastfeeding, they ate after the male members of their household and received smaller portions of often less nutritious food (discussed further below), and continued hard physical work until late in their third trimester. Adolescent girls suggested it was unfair that boys received larger portions of better food whilst the girls also had to do heavy domestic work and sometimes farm work too. Boys also had access to '*special'* foods seen to enhance their energy levels and productivity including coffee, energy drinks and beer, which were not so readily available to girls.

In contrast, participants across the research sites in Cambodia were emphatic that food was not apportioned within the household. They associated food rationing with acute food shortages experienced during recent history. As one community leader stressed '*everyone can eat until they feel full. Everyone is free to eat as much as they want… We are not Khmer Rouge'.* In their workshops, many adolescents confirmed that food was always available and equitably distributed, and as one 15 year old participant in Prey Veng concluded, *'I have never had nothing to eat. I eat until I'm full'.* Because side dishes were less plentiful than rice, however, whether a family ate together or separately impacted who had access to the soups or '*dry'* meats served alongside rice. In Phnom Penh and Prey Veng, where it was more common for girls to help their mothers or grandmothers prepare the meal and where the evening meal was eaten together as a family, girls had equal access to the side dishes they helped prepare. Girls in Ratanakiri who had to prepare their own meals or had food left for them might not have the same access to side dishes as other family members. In Ratanakiri, it was common for family members to serve themselves from a communal food dish at different times in the evening depending on when they finished their day's labour.

'*This is my mother making chili. My father eats first and my mother and I eat when we finish making tortillas*'.
14 year old girl, Alta Verapaz, Guatemala.



Pregnancy-related food restrictions were identified by participants in many field sites. In indigenous communities in Guatemala, the long tradition of classifying food as either '*hot'* of '*cold'* was used to '*protect*' pregnant and lactating women from eating foods that might harm them and/or their baby, although it often resulted in restricting nutrient intake. In Samburu, Kenya, participants confirmed that pregnant women (including adolescent girls) were restricted as to the quantity and type of food they could eat in order to limit the foetus size and reduce the risk of obstructed labour. For the duration of pregnancy, their diet mainly consisted of milk mixed with water, and their intake was monitored by their husband, mother-in-law and community elders. In Meru, pregnant women were encouraged to consume lots of fluids, such as soup, fruits and yams. Unmarried adolescent mothers suggested that they were sometimes seen as a burden on their households, and as such, those living at home often received only one portion of food to divide between herself and her child. Many mothers reported that they would prioritise their child and at times forego meals. A youth leader in Meru raised concerns that restrictive diets during pregnancy and the post-partum period may affect the production of breastmilk and contribute to young mothers not breastfeeding exclusively for six months.

In Cambodia, multiple food restrictions were identified by participants, many of which related specifically to pregnant and lactating women. Amongst the indigenous ethnic minorities in Ratanakiri, food taboos were often enforced by strong social norms, and non-adherence risked consequences not only for the mother and her child but for the whole community. Restrictions governing the later months of a woman's pregnancy revolved around the notion of trying to ease her delivery by preventing mother and child from '*sticking'* together during labour. Therefore, any food that was viewed as closely connected to something else (e.g. a coconut to its husk, or a turtle to its shell) was to be avoided. The physical appearance of a child was also thought to be associated with the consumption of certain foods. It was thought, for example, that eating eggs might lead to an unattractively round or obese child. This led many women to avoid such foods. Food restrictions were reinforced by the desire to bear smaller babies, as it was known that a larger baby could contribute to a difficult labour. It was notable that some of the most-practised food taboos in Ratanakiri restricted the consumption of foodstuffs that provided valuable nutrients. It was also considered to be more important for first-time mothers to strictly observe food taboos than it was for women who had had multiple children. This may have contributed to the difficulties many mothers reported in relation to their first pregnancy and delivery, particularly in the case of adolescent pregnancy.

Participants in Uganda also discussed traditional food proscriptions that restricted food intake during pregnancy in order to limit the size of the foetus. It was reported however, that such practices and other food taboos were no longer observed due to general food shortages, which meant that, in effect, everybody had a restricted diet. As one adolescent girl in Atedeoi concluded, *'is there any food I am not allowed to have? No, any food I can find I can eat*'.

Security, substance abuse and alcohol

In Samburu, Kenya, where *morans* acted as livestock herders and key protectors of their villages, hunger was linked explicitly to cattle raiding. One local government representative explained, '*if you don't have anything to eat, you must fight* [cattle raiding] *to get at least some milk, some meat when you are away from home with the animals'*. Insecurity from cattle raiding and highway banditry further affected access to food as it limited market and trade routes and restricted the provision of external support to the area.

In urban field sites in Guatemala, participants at all levels identified violence and substance abuse as key barriers to a safe and healthy adolescence. Adolescence was seen as a vulnerable period during which youth were susceptible to alcoholism, drug abuse and both gang-related and gender-based violence. Because of their socio-economic situation and geographical location, urban adolescents reported that they were at risk of being recruited into street gangs. Participants suggested that being part of such an organisation could result in economic prosperity (and hence the availability of more food). This, at least in the short-term, was often prioritised over risks to personal health and safety. In Chimaltenango, the largest city included in the study in Guatemala, gang violence was common and linked to the promise

of material benefits, for as one adolescent participant concluded, '*Yes, it is dangerous, but at least you can eat*'.

Violence against women and sexual violence were also issues raised by participants. In their workshops, girls in Guatemala expressed fear about '*walking alone'* and those residing in urban centres confirmed that because of this, they spent the majority of their time inside their '*colonias'* (gated communities) and at home watching '*telenovelas'* (soap operas from Mexico) or chatting with friends on their mobile phones. Although this allowed girls to avoid risk and outside violence, it made it challenging for urban girls to participate in exercise, and they often reported high levels of sedentariness. Issues of security also had a significant effect on the lives of adolescents in Nairobi, particularly issues linked to theft and the threat of sexual violence. Elevated risk levels limited the movement of adolescent girls, restricting their access to certain food markets judged to be unsafe. Although the dumpsite in Ngomongo was an important source of food, it was perceived to be a dangerous place that required adolescents to take precautions against gang violence. One adolescent girl referred to the process of sourcing food from the dumpsite as being *'survival of the fittest'.* In Uganda, a number of participants highlighted that the communal living practices of adolescent girls may elevate their risk, although several girls countered that '*living and moving together'* actually enabled them to protect one another from sexual assault (before they get married and move to their husband's household). Sexual violence was also identified as a priority issue by refugees in Adjumani, often related to heightened vulnerabilities caused by adolescent girls consuming alcohol (discussed further below).

In Guatemala, substance abuse was also highlighted as a factor preventing the healthy development of adolescents, particularly older boys in urban centres. Alcohol or drug use was often reported by urban boys as a way to escape their daily struggles ('*to forget'*) or as a substitute for food, '*it fills us up when we don't have food'*. In Meru, Kenya, where the main income-generating activities for adolescents were related to cash crop industries, local programme implementers confirmed that children began to work in *miraa* production from the age of seven. *Miraa* (khat) leaves are chewed for their stimulant effect and their involvement with *miraa* created significant health issues for adolescents. In Maua, adolescent participants estimated that two to three girls and seven to eight boys in every ten habitually chewed *miraa*. They reported this directly affected food consumption as *miraa* suppresses the appetite.

Alcohol was discussed by adolescent participants in all four countries. In Cambodia, girls made and sold the local rice wine that was consumed regularly by all members of the community, including, at least in Ratanakiri, children and younger adolescents. In both Kenya and Uganda, adolescents were also heavily involved in the brewing business and girls documented both brewing and selling alcohol in their participatory workshops. Selling alcohol was a major source of income and a way to generate sufficient resources to buy food. As in Guatemala, drinking alcohol was highlighted as a common strategy to overcome hunger, but in Uganda, alcohol was also considered a food source in itself. In Moroto, Uganda, adolescent girls reported drinking one or two cups per day ('*it's like our breakfast*'), and both there and in the sites in Kenya, the residue created during the brewing process was eaten *'to fill the stomach*'. As one 12 year old boy in Moroto explained, '*sometimes we sleep hungry or only with [alcohol] residue, until again you go back to school, where you eat*'. It was notable that amongst the host community in Adjumani, Uganda, girls suggested, '*young girls should not brew. The government should encourage people to cultivate and sell their produce in order to get money instead'.*

'*Brewing alcohol*'.
Photo by 15-19 year old girl,
Moroto, Uganda.

Education and school attendance

Across the four countries, school attendance was seen as a protective factor against a range of adolescent vulnerabilities that had the potential to impact nutritional status. Staying in

'*The boys go to school, but not me*'. Photo by 15-19 year old girl, Chimaltenango, Guatemala.

school was viewed by participants as protecting girls from pregnancy, discouraging early marriage, preventing child labour activities, and shielding boys from '*being idle*' and the pressures of criminality, gambling and substance abuse. Many caregivers aspired to have their children complete school to protect them from a '*hard life*' and to improve their life trajectories and in Guatemala, for example, adolescents confirmed their desire to have a good education '*for the future*' that would enable them to '*work in the city with clean clothes*'.

Some of the younger adolescents engaged in the study attended school, but although the value of education was well recognised by most, many of the older adolescent participants had dropped out due to other competing responsibilities including income-generation activities and household duties. In Cambodia, the distinction between in- and out-of-school was more clear-cut, whilst in Guatemala, Kenya and Uganda, the attendance of children and adolescents who were registered at school was more fluid and dependent on a household's changing financial situation and seasonal duties, such as harvest. Across all four countries, however, the rate of dropout between primary and secondary school remained very high. In Uganda, for example, 42% of eligible 13-18 year olds were not in school and enrolment was lower in rural than urban areas, and lower for girls than boys (Uganda Ministry of Health et al., 2017).

Many participants highlighted that attendance at secondary school required significant resources (money for transport, school fees, uniforms, books and other school materials, and, particularly in Cambodia, extra tuition to supplement the normal class schedule and help students prepare for exams). For many households, these costs were burdensome and a dominant barrier preventing school attendance, compounded by the opportunity costs associated with taking time away from income-generating activities. In Adjumani, Uganda, school fees were emphasised as a particular obstacle for refugee orphans, directly limiting their participation in the school system. In their participant workshops in Cambodia, girls frequently discussed the pressure they felt to leave school to seek employment (primarily low-skilled work in the garment factories) to contribute to their household's finances. Participants in all four countries discussed vocational training with enthusiasm, seeing it as a way to link education more directly with income generation.

With limited economic resources, caregivers often had to choose which child or children to send to school, and across the four countries, a boy's education was usually prioritised over a girl's. It was well accepted that adolescent girls, particularly older girls, would leave school to help shoulder the burden of housework and care for siblings. In Ratanakiri, Cambodia, girls admitted that school provided a '*welcome break*' from their heavy chores, yet attendance frequently led to a sense of guilt. They explained that an education could feel like an indulgent

'*This is Ampil village*'.
12 year old girl, Prey Veng, Cambodia.

and selfish pursuit when juxtaposed with social expectations that they would marry, have children and work on the farm as their mothers and grandmothers had done. For many, pursing an educational goal could be an isolating experience, as they received limited help with their homework from illiterate family members, could not fully participate in communal life, and often had to return home to an empty house and prepare their own meal whilst their families were on the farm. Even if they had been left food, they had to eat alone, and for many, this emphasised their isolation.

In Cambodia, Kenya and Uganda, girls and their caregivers confirmed that they often missed school due to menstruation, associated embarrassment and limited personal hygiene management knowledge and opportunities (although in both Kenya and Uganda, it is becoming increasingly common for the government to provide sanitary materials to schools). Participants in all four countries confirmed that girls who were not in school were more likely to marry earlier and that non-attendance was actually interpreted as an indication that a girl was ready to marry. It was noted in Moroto, Uganda, that school attendance could reduce a girl's bride price and this was a factor in caregivers not sending their daughters to school. Across all four countries, there was general consensus that if a girl became pregnant, she would likely drop out of school. Kenya has policies in place to encourage the re-entry of teenage mothers into education, but similar initiatives were not evident in the other countries included in the study.

Sexual and reproductive health

Sexual and reproductive health was raised as a central issue that affected adolescents' nutritional status across the research sites, particularly related to adolescent pregnancy as a direct consequence of low contraception rates, early sexual debut, early marriage, sexual violence and HIV. The legal age of consent in all four countries is 18 years, but many adolescent girls were married at younger ages. In Uganda, for example, 15% of girls are married by age 15, and nearly 50% by age 18 (UBOS and ICF, 2017).

In Kenya and Uganda, early marriage was often initiated by caregivers to secure their daughter's bride price. This was particularly evident at the time of the research as the recent droughts had left many families with limited resources (depleted livestock, food reserves and

Nga'kobain are groups of adolescents girls who live, eat and sleep together. The name is derived from the term *kikob* meaning *'passing something between one another'*. Moroto, Uganda.

money). Bride price was seen to be an important source of immediate income and, as it was often paid in the form of cattle, a positive way to replenish a dwindling herd. As one local leader in Adjumani, Uganda, explained, '*parents are offering the girls for wealth because of poverty*'. Many regarded girls who were under 18 years old to be adults due to their household responsibilities and high degree of self-reliance, but this often resulted in young adolescent girls being married to men over 50 years old, particularly among the Karamojong in Uganda who are polygamous.

In Guatemala, pre-marital relations between young adolescents are taboo. From an early age, girls are taught by their mothers that virginity is one of their most important virtues. Social perceptions about '*saving oneself for marriage*' are dominant and linked to the strong moral influence of the church. Guatemala has one of the highest teenage pregnancy rates in Latin America, due in part to the lack of available contraception, stigma associated with family planning, and church authorities' condemnation of the use of modern contraceptives.

Adolescent pregnancy rates were also high in the other three countries, and contraception use remained low across the research sites. Many caregivers concluded that adolescent pregnancy was a huge burden and associated with significant shame. Despite this, adolescent participants often conveyed a negative attitude towards contraception and a reluctance to use condoms. Adolescents in Nairobi, for example, often quoted the common saying '*you cant eat a sweet with its wrapper, you need to remove the wrapper*'. In Guatemala, participants suggested that not being allowed to have sexual relations was a primary driver for early marriage. Many adolescent girls felt sufficiently mature to '*make decisions about our own lives*' but confirmed that even when they were informed about sexual and reproductive health, they did not always have the agency to protect themselves. In their workshops in Guatemala, older adolescent girls explained that their male partners often did not '*give permission*' to use contraception, but asked them to have unprotected sex as a '*prueba de amor*' (test of love). Adolescent boys in Guatemala agreed that they faced fewer restrictions than girls. Having multiple sexual partners was reported to be a source of pride for older adolescent boys, whilst girls were expected to only have one sexual partner, their husband. In Uganda, a number of adolescents in Adjumani discussed girls resorting to home abortions, and reported adolescent deaths related to secret terminations.

In contrast to the other field sites, sexual exploration at the onset of puberty was the social norm for both girls and boys in the ethnic communities in Ratanakiri. This contributed to a

Beaded girl,
Samburu, Kenya.

permissive attitude regarding sexual activity between adolescents, and the commonality of early marriage between adolescents, particularly if the girl became pregnant. This was a sharp counterpoint to the prevailing caregiver attitudes in the other research sites in Cambodia, Phnom Penh and Prey Veng, where mothers expressed great concern for the increased attention their daughters were likely to receive during adolescence and described making their daughters aware that they needed to be '*shy'* (i.e. cautious) around boys and men who showed them attention.

In Kenya, national stakeholders identified pregnant adolescents, adolescent mothers (mature minors) and adolescents with HIV as particularly vulnerable groups at significant risk of malnutrition. Reaching them remains challenging and participants emphasised that because the needs of these adolescents were not well addressed or advocated for, they were in danger of being left behind.

Service delivery issues

Health facilities are an important avenue for nutrition services, particularly during pregnancy and the first 1000 days, yet many adolescent mothers who participated in the study had not attended antenatal care (ANC). Adolescents across the research sites did not regularly interact with health facilities and regarded them as '*places for sick people*', rather than for preventative care. Negative community attitudes towards early pregnancy made pregnant adolescents feel ashamed, and many girls confirmed that they were likely to '*hide themselves away*' and not present for care.

Adolescents also highlighted a number of barriers that prevented them from attending health facilities more generally. There was a lack of privacy at health centres and girls did not want to raise their profile by attending. They recounted negative experiences at the point of care, including difficult interactions with health staff and language barriers. They described their '*fear*' of having to describe a health issue to medical professionals; of being judged by other community members waiting at the facility; and of rumours around certain procedures. Other key barriers included distance to the facility; long waiting times; drug shortages and stock-outs; and the lost opportunity to generate income and complete household duties. In both Kenya and Uganda, adolescents confirmed they were reticent to attend health facilities because of their negative association with HIV and mandatory testing as part of ANC. In Meru, Kenya, girls emphasised that they did not attend ANC because '*you prefer not to know your status'*. This suggests that, unfortunately, the inclusion of HIV testing within an integrated service actually created a barrier for the entire service. Similarly, in Guatemala, adolescent girls did not attend health facilities to avoid potential accusations of being sexually active before marriage ('*the health facility is where pregnant girls go*').

In both Kenya and Uganda, '*youth friendly services'* are outlined in policy but few appeared to be in place and it was notable that ANC was not provided as part of the package of services. During the study, service providers in Uganda reported a lack of resources to carry out community outreach and confirmed, '*we don't have the resources and logistics to deliver knowledge to adolescents. Youth friendly services are a burden'*.

In Kenya and Uganda, school was recognised as a direct means to address child and adolescent nutrition through school feeding programmes supported by a range of NGOs and WFP. In Moroto, Uganda, school meal provision was reported as a primary motivator for school attendance, and as one teacher asserted, '*if there is no smoke from the kitchen, children will not come to school*'. Another school teacher expressed concern that school was being used as a '*feeding centre',* that children were coming at break-time for food, but then leaving to continue their household duties or income-generating labour. In contrast, the lack of school meals in Adjumani was cited as a reason for non-attendance, absenteeism and drop-out. In both Nairobi and Samburu, Kenya, the provision of lunchtime meals at primary schools was seen to directly encourage attendance, although caregivers described the food as lacking in variety. Caregivers did not always know how much food was given to their children at school, and their perceptions of school-provided rations affected how much food they gave

children in the household. If children were thought to have eaten a larger lunch at school, for example, they were likely to be given less for an evening meal at home. Standard portions were served to the pupils regardless of age, however, meaning that a four-year-old girl was allotted the same as an 18-year-old boy. In Meru, the third research site in Kenya, the school visited as part of the study reported receiving only minimal support from the government and did not have a partner organisation, so the provision of school meals relied on contributions from both caregivers and the school. Some children explained that they had to go home for lunch or skipped a midday meal altogether. Stakeholders emphasised that the provision of regular school meals would be a powerful incentive for children to attend school, and suggested that schools should cultivate a kitchen garden to supplement basic meal options with more vegetables.

For the refugee population in Adjumani, the unpredictability of household ration supplies and recent cuts in the size of rations were also seen to be problematic in terms of food security and the ability to ensure good adolescent nutrition. Programme implementers agreed that '*communication with communities must be improved. When they are delays in food, it is serious'*. This was particularly important for adolescent girls, who had many responsibilities within the household, largely around food, but often received information last. Adolescent refugees highlighted that rations did not always reach the most in need and suggested corruption in the system. In their participatory workshops, adolescent refugees in Adjumani explained that families would often resort to selling food rations to buy larger quantities of cheaper, lower quality goods.

Young girl reading, Ratanakiri, Cambodia.

Engaging adolescents

Understanding how to effectively engage adolescents is essential for assessing how nutrition-specific and nutrition-sensitive interventions can be delivered and best related to other components of the 'adolescence equation'. Across the research sites in all countries, there was a high level consistency in the priorities and needs adolescents articulated in relation to their engagement.

'Come to us, fit around our lifestyles'

Adolescents stressed the importance of accessibility and preferred to be 'reached' in places they already frequented and at convenient times. Interventions must be tailored to fit the often-chaotic lifestyle of adolescents and must recognise their competing priorities whilst encouraging greater gender equity and opportunities for adolescent girls.

'Show us real experiences'

Adolescents confirmed that they found 'real life' stories to be the most engaging and affective way of sharing and learning from experiences. Across all research sites, adolescents emphasised their desire to have activities for young people facilitated by youth leaders who were close to them in age and socio-economic status, who had shared similar experiences and challenges growing up, and, in Guatemala, were of the same gender.

'Make it entertaining'

In all four countries, great importance was attributed to the need for activities to be primarily entertaining, as well as informative and understandable. The use of music to attract and sustain the attention of adolescents was highlighted. Dance, theatre groups and sports activities were also popular.

'Use our groups, don't group us'

In Uganda and Kenya (apart from Samburu), adolescents expressed preference for being grouped together, unless interactions were likely to be particularly sensitive, in which case grouping by gender was more appropriate. In Cambodia and Guatemala, girls were more likely to propose girl-only groups. In all countries, adolescents also suggested grouping according to life stages: married girls and young mothers should be engaged separately from unmarried girls; older boys separately from younger boys; and some suggested that in-school adolescents should be engaged separately from those who were out of school.

Boys inside the *manyatta*.
Moroto, Uganda.

'Speak our language'

The importance of conversing with adolescents in their local language was stressed. Adolescents highlighted the benefit of tailoring language not only to fit with their dialect, but also their colloquialisms, age and in some cases, gender. They also stressed the need to be spoken to with respect in order for them to feel comfortable engaging with services and programmatic interventions.

'Ask us, include us'

Adolescents stressed that they wanted to be involved in a participatory manner. They suggested that rather than passive or one-directional methods of conveying information (such as billboards, brochures and posters), they wanted to be included in interpersonal activities. This would give them a chance to ask questions, be involved in key decision-making processes and ensure that their voices were heard and opinions recognised.

'Be fair'

Adolescents stressed that different and multiple modes of engagement may be needed to interact with adolescents, but that all engagement should be transparent. The importance of trust and privacy was repeatedly emphasised and adolescents were wary of information or situations they perceived to be discriminatory. Ensuring equity in both engagement and the provision of services was highlighted as a priority.

'Include the people around us'

Because of the important gatekeeper roles that caregivers played in their lives, adolescents emphasised that initiatives directed at their engagement should also involve their families, or at least secure their buy-in. Girls in many field sites highlighted that they did not have the same decision-making agency as boys and suggested that girls be supported to negotiate with their families to facilitate their participation in activities.

'With food, we need energy now'

The need to show the immediate benefit of food to secure adolescents' interest was highlighted across the field sites in each country. Adolescents reported that having energy was their priority to ensure they could complete their daily workload. This focus on the present should be carefully considered in adolescent nutrition programming and to create opportunities to set new and healthy trends.

'Build us for the future'

Adolescents wanted engagement activities to build their skills and interests. They were most receptive to learning when it was incorporated into activities they enjoyed and were good at and which prioritised issues they identified to be important. Participants emphasised the importance of engaging adolescents holistically, providing health and nutritional information alongside sexual and reproductive health services, education and vocational training.

Adolescent boys, Korogocho informal settlement, Nairobi, Kenya.

Recommendations

The world currently has the largest generation of 10-19 year olds in history (UNFPA, 2014). As a population group, adolescents have unique health concerns and needs, and as a target group they require specific nutrition interventions. There is clear evidence of the growing disparities among adolescents and youth within and across countries. Demands on young people are new and unprecedented and those who live in poverty face major disadvantages. With the Sustainable Development Goals, the global policy landscape has shifted, and adolescents are being recognised as a significant population that deserve greater visibility and attention.

The research gathered new empirical data in Cambodia, Guatemala, Kenya and Uganda on the experiences, needs and priorities of adolescents regarding their health and nutrition, and sustainable development, and it established their engagement preferences in different contexts. It highlights that adolescents are both knowledgeable and practical about the often-competing issues facing them as individuals and in relation to their households and communities. Their energy and the important place they occupy in society must be recognised and positively harnessed if sustainable development is to be achieved.

In conclusion, a series of user-centred recommendations are made in relation to strengthening the visibility of adolescents; influencing adolescent nutrition; engaging with adolescents; identifying platforms for engagement; and maximising entry points for strategic partnerships. A summary table that collates key policy and programming implications is presented at the end of the chapter.

Strengthening the visibility of adolescents

- Despite the evident differences in national policies across the four countries included in the research, all have a valuable window of opportunity to further develop their enabling environments for adolescent nutrition. In Kenya, promising policy developments include the Food Security and Nutrition Policy and the Neonatal, Child and Adolescent Health Policy, both of which highlight specific interventions for improving adolescent nutrition, and the National School Health Policy, in which nutrition is one of eight key pillars. In Uganda, the development of the Adolescent Health Policy that includes a detailed section on nutrition is promising. Similarly, the Maternal, Infant and Young Child Nutrition Roadmap offers guidance on promotion, prevention and treatment with a focus on multi-sectoral efforts. The challenge in both countries is to support these policies to be well implemented, and to advocate for the inclusion of adolescent nutrition in related policies. In Guatemala, although there is not a specific policy appertaining directly to adolescent nutrition, there is a wide range of adolescent-focused and adolescent-sensitive policies on health (mainly sexual reproductive health) and education. The National Strategy for the Prevention of Chronic Malnutrition 2016-2020 highlights the elevated risk profile for overweight and obesity in adolescence, and the National Development Plan (Ka'tun 2030) advocates for the active participation of adolescents in the social and economic life of the country. Lessons should be learnt from other initiatives and synergies created across sectors for effective programming. In Cambodia, however, adolescents remain largely invisible in policy. Adolescent health and nutrition are large-scale challenges, and as a sub-population with unique nutritional needs, adolescents are at risk of being left behind. Focused advocacy efforts are needed to encourage key actors to commit to interventions for this group and allocate appropriate financing and resources. The new National Strategy for Food Security and Nutrition, which was under development at the time of the research, presents a key opportunity to explicitly include adolescents as a priority group in national policy.

- To strengthen the evidence base, there is a need to disaggregate available data for adolescents (particularly the 10-14 year age group), and to systematise routine collection of adolescent-specific data related to nutrition and beyond. To complement and supplement routine quantitative data, high quality qualitative data should be collected to better understand the lived realities of adolescents, and the complex root or underlying causes for their nutrition practices and food-related behaviours. At national and sub-national levels, competencies must be developed to analyse, interpret and apply both qualitative and quantitative data.
- The definition of adolescence at the national level is not consistent, and in each country, it is defined differently across sectors and ministries. As a result, the needs of adolescents are at risk of being diluted or falling through the cracks. The tendency at both policy and programmatic levels to group adolescents with 'children', 'youth' or 'women of reproductive age' reduces the visibility of adolescents, hampers the identification of adolescent-specific problems, and limits the development of appropriate strategies and programme design to meet their specific needs. Although it may not be possible to agree on definitions and terminology across all sectors, it is important that measures be taken to prevent adolescents' needs from being insufficiently addressed. This will require focused advocacy with national stakeholders and partners to ensure their commitment to this age group, regardless of the terminology used.
- Similarly, the definitions of adolescence at the national level are rarely consistent with definitions used at the community level. This results in some adolescents self-identifying in ways that prevent them from seeking youth-orientated services. 'Adolescents' must not be interpreted as a homogenous or standard group. Within this age group, different life-stages occur and should be accounted for. Similarly, adolescents are subject to a range of socio-economic and contextual factors that shape their lived realities. These sub-groups are not mutually exclusive, rather an adolescent can belong to or self-identify with multiple groups concurrently and over time. Assuming a user-centred design approach, interventions should therefore be developed to be sensitive to variables including age, gender, socio-economic status, life experiences/stages, livelihoods and ethnicity. Effective engagement should target groups as defined and understood at the community level.

Adolescent girl participating in photowalk exercise, Meru, Kenya.

Influencing adolescent nutrition

- When taking adolescents as the central unit of analysis, it becomes clear that this group is uniquely affected. Programmes targeting adolescents must take account of the nutritional challenges faced in different contextual settings and the impact these have on adolescents' overall growth, development and wellbeing. In taking a systems-based approach, it may be more valuable to add nutrition into existing programmes, whilst in other situations, establishing nutrition-specific platforms may be more appropriate.
- Increasing communication and information about nutrition alone will not improve the diet or healthy behaviour of adolescents. Rather, interventions should address the nutritional needs of adolescents in the context of and in combination with other key components of their lives. Restrictive social norms, sexual and reproductive health issues including early marriage and teenage pregnancy, and access to education are critical components related to improving nutritional status and wellbeing and can only be addressed through engaging key influencers (including fathers, husbands and mothers-in-law). Communication and information should be combined with improved access to healthy food and other services.
- In addressing agricultural practices for adolescents and their households, an agri-nutrition lens should be adopted. Knowledge, skills and resources should be developed for effective and efficient irrigation systems and post-harvest storage, and consideration given to issues of land access. New and emerging urban-agricultural methodologies (e.g. sack- or container- gardens) may be particularly relevant and appealing for adolescents residing in urban and peri-urban localities.
- Girls and young women have heavy workloads that contribute to their high energy expenditure and often limit the time they have available for other activities including school attendance, homework, socialising and recreation. Their domestic duties appear to be less valued than income-generating work. Advocacy efforts should highlight the importance of the contributions that girls make to their households whilst interventions should explore how to a) reduce their domestic burden by supporting a greater division of labour within the family unit and introducing technological advancements that could reduce their workload; and b) break gender-defined roles and responsibilities so that girls have credible access to multiple opportunities.
- In many contexts, ingrained gender norms related to food allocation within the household prevent girls' healthy nutrition. Yet gendered social norms affect boys as well as girls, and should be purposively accounted for in programming to ensure all adolescents receive appropriate provision.

Engaging with adolescents

- As target beneficiaries, adolescents should be engaged as active participants in the design, implementation and monitoring of interventions. Programmes should be sensitive to the needs, preferences and priorities of adolescents. During the research, adolescents across all four countries clearly articulated suggestions that should be operationalised including ease of access, the strategic use of language and showcasing real experiences. They emphasised the importance of privacy, trust and transparency in all engagements. They wanted interventions to develop their skills for the future, but to be dynamic and entertaining, using music, dance and sport.
- Adolescents took a high level of responsibility for their own food choices, and often for food preparation for their household. They can therefore be agents of change for family members and their broader communities. In addition to receiving information about nutrition and nutrition-related services for their own wellbeing, adolescents should be considered primary targets for cascading knowledge and improving the nutrition of other vulnerable groups (e.g. children under five, pregnant women).
- There is a need to support trusted adolescents to assume positions of leadership to represent the voice(s) of their peer group(s), to ensure appropriate user-centred design, and to provide monitoring and evaluation feedback to ensure programmes are appropriate, relevant and effective.

- Several key influencers in the lives of adolescents were identified, including caregivers and parents, particularly mothers, aunts and grandmothers (for younger adolescents); husbands and mothers-in-law (for married female adolescents); older siblings; peers (for older adolescents); teachers (for those in-school and particularly for the refugee communities in Uganda); community leaders (for adolescent girls and boys of different ages); and religious and spiritual leaders (particularly important in Guatemala, although less relevant in Ndoto and Samburu in Kenya, rural Moroto in Uganda, and in Cambodia). Securing the buy-in and support of key influencers is vital in both generating demand and facilitating the timely utilisation of programmes and services. In Kenya, mentors and ambassadors who were the face of campaigns targeting adolescents were also identified as powerful advocates, but who is best placed to act in this regard, and specifically in relation to adolescent nutrition, requires careful consideration and further research. Similarly, in Guatemala and Uganda, it was highlighted that in line with the strong oral culture, mentors from the community acted as positive role models and key influencers.

Platforms for engagement

- Considering the dynamic needs of adolescents, there is no 'one size fits all' delivery channel. Interventions should respond to the complex realities of an adolescent's life and, rather than being an additional burden, should be mindful of the conflicting responsibilities they may have. Adolescents should be engaged through multiple avenues or platforms that are mutually supportive. As national-level stakeholders confirmed in Uganda, to successfully programme for adolescents, it is critical to work within their '*circles of life*'.
- The formative research and stakeholder mapping documented existing programmes that engaged adolescents and included activities related to nutrition; sexual reproductive health; HIV prevention, treatment and management; livelihoods, economic empowerment and life-skills training; agriculture; education; social protection; and participation, governance and leadership. There was a particular bias towards girl-centred programming and sexual reproductive health and HIV programming. Overall, however, only a few programmes were designed with adolescents (defined as 10-19 year olds) as the primary beneficiaries. These were rarely implemented at scale and coverage was limited. It is important, therefore, that improved cross-sectoral coordination between actors working with adolescents be fostered, which will in turn help to maximise reach and coverage.
- Various platforms engaged adolescents at the community level. Adolescents discussed their preference for being engaged at informal community spaces, through clubs and groups with peers and with a strong support/mentoring component.
- For those adolescents in formal education, school was identified as a positive and trusted platform for engagement. Across all four countries, however, school was noted to be a selective channel given that not all adolescents (particularly girls and older adolescents) attended. In harnessing the potential of school as a platform, sustained access to education should be facilitated and promoted, particularly in terms of secondary education (for both boys and girls) and in relation to adolescent girls who are pregnant or already mothers. More must be done to guarantee the safety of children at school and reduce the risk of school-related violence.
- In all four countries, it was noted that reducing household poverty by increasing income-generation opportunities for caregivers and household heads is key. This will reduce the burden on adolescents to contribute to the household economy. If adolescents do need to work, then safe income-generating opportunities should be designed around keeping adolescents in school (e.g. scheduling activities for adolescents during non-school hours and at weekends; supporting household incomes on the condition that children and adolescents attend school). For older adolescents and those who do not attend school, vocational training that develops business skills and provides resources such as start-up equipment is an important avenue of constructive engagement. Vocational training should be tailored to actively target and empower adolescent girls and women.
- In general, only girls who had recently given birth or attended antenatal care services discussed health facilities as places that provided health- and nutrition-related advice.

Other adolescents, including boys and younger girls, were more likely to perceive health facilities to be for curative treatment, and perceptions around contraceptives and the negative implications of sexual reproductive health and pre-marital sexual relations restricted the use of health services by many adolescents in all four countries.

- There is scope to actively engage adolescents though religious institutions, although only in communities where religious practices are valued and routine. In Guatemala, for example, religious institutions played a significant role in the lives of all adolescents who participated in the study. There, churches are easily accessible and socially acceptable, particularly in rural areas where limited activities for adolescents are available. It is challenging, however, for religious institutions to actively tackle sexual and reproductive health and family-planning related issues, and this may limit the potential impact of the church as a delivery channel.

- Technology platforms are a promising way to engage adolescents, yet the research provided further evidence that the penetration and use of technology is highly context-specific and differs according to social groups, age and gender. As would be expected, technology use, including mobile phones, was more widespread in urban areas than rural areas in all four countries. Older adolescents appeared to have more access to technology than younger adolescents, and internet usage was not closely monitored by caregivers except in Guatemala where some girls confided that they had '*secret'* mobile phones to communicate with friends and boyfriends. Social media platforms were popular with adolescents who had access to such technology, particularly Facebook and in Uganda, Kenya and Guatemala, WhatsApp. Girls in urban areas of Guatemala used social media to communicate with their friends given their restricted mobility due to safety concerns. Many adolescents were concerned about the validity of online information and some suggested that trusted and secure online sources of information specifically for adolescents should be developed and promoted. Although radio was widely accessible in all four countries, most adolescents did not listen regularly except in indigenous communities in Guatemala, where adolescents reported listening to community radio in their local language, and in some areas of Uganda, where programme implementers suggested that adolescents should be involved in the design of programme content and strategies such as 'listening groups' should be established. When adolescents had access to television, it was generally more popular than radio and was increasingly available in rural as well as urban areas. In all four countries, participants emphasised the importance of negotiating the use of new technologies with parents, caregivers and other 'gate-keepers', particularly if girls and younger adolescents are the target group for social media-based interventions.

Entry points for strategic partnerships

- Policy and programming entry points need to be strengthened and expanded. Currently most adolescent programming is selective and localised. Actors already engaging adolescents in other sectors should be encouraged to include nutrition in their activities. Similarly, actors already active in the nutrition, food and agricultural sectors should be encouraged to expand their policies and further tailor interventions to better reach adolescents. The positive effect of joint investments must be better demonstrated and a stronger business case made to both donors and ministries of finance.

- Coordination between government, partners and programme implementers should be improved to support an enabling environment for adolescent engagement. Commitment to channels that can reach the most marginalised and vulnerable adolescents is needed. Adolescent programming must be creative and use approaches that target particular groups of adolescents (e.g. out-of-school adolescents and mature minors) in ways they prefer and to which they are receptive. Investment in these channels should be prioritised in mainstreaming nutrition-sensitive and nutrition-specific activities.

- Many adolescents are included in activities that are orientated towards adults. In acknowledging this, programmes should be aware of the special needs of adolescents of different ages and encouraged to modify their services appropriately. Services aimed at women of reproductive age should purposefully try to reach all adolescents, and services aimed at pregnant women should ensure that pregnant adolescents are effectively

included. By advocating for a youth friendly approach, adolescents could be engaged in ways and through channels that they have suggested and prioritised. Services must be presented in a way that helps adolescents see them as directly relevant and inclusive, particularly in terms of preventative as well as treatment-orientated services. Engaging adolescents when they are younger (e.g. 10-14 years) is important. Normalising health facility visits for this age group can reduce stigma related to attendance and would help move away from the negative association between health facility attendance and sexual reproductive health issues.

- In Kenya and Uganda, there is an urgent need to overcome bottlenecks in school feeding programmes and to improve the efficiency of school feeding, particularly in drought-affected zones. Expanding school feeding programmes to purposively include adolescents may be a positive driver to encourage adolescents to maintain school attendance and benefit from the protective capacity of the education system for longer, delaying early pregnancy and marriage, with the resulting positive impact on nutrition. Portion sizes and micronutrient content should be adjusted to cater to the greater nutrient needs of adolescents as compared to younger children. Structural weaknesses inherent in the school system, including limited storage facilities for food products and poor access to water and sanitation need to be simultaneously addressed.
- The food industry should be positively engaged to ensure low-cost and healthy food is produced and sold, and to influence market trends towards the recognition and consumption of food that is healthy and has a high nutrient value. The Scaling Up Nutrition (SUN) business network could be strengthened to serve as an effective entry point to develop strategic partnerships with the private sector.

Adolescent girl, Adjumani, Uganda.

Summary of key policy and programme implications

	Key considerations
Promotion of healthy foods	• Knowledge about healthy food does not directly translate to healthy food practices, so investment should be made to ensure adolescents assume healthy diets and consumption patterns. This is linked to making healthy food not only available and accessible, but also aspirational and attractive. • The promotion of healthy foods should focus on components adolescents value in terms of choice and consumption, primarily that they are energy-giving, filling and tasty. Incentivising adolescents to choose healthy food and adopt healthy food practices should be linked to positive identity markers and social status. • Although many adolescents are attracted to food they consider to be novel, there are avenues for promoting both traditional and fashionable foods that are healthy and nutritious and for aligning them with adolescent aspirations. • Promoting diverse, healthy, natural and affordable foods in small shops and food carts (particularly those located close to schools and workplaces) would increase their availability to adolescents, who should be encouraged to choose healthier food over other options. In parallel, the promotion and availability of unhealthy food should be curbed and food safety improved, particularly in relation to marketers, food vendors and small businesses selling pre-prepared foods. • Snacks and 'on the go' foods are particularly appealing to this age group, and so cheap, safe and healthy ready-made food should be made widely available. Ongoing initiatives to fortify snacks should also be supported. • Because adolescents have high levels of responsibility for their own and their families' nutrition, particularly that of their younger siblings, it is important to target messaging aimed at benefitting other vulnerable groups (e.g. children under five years old) towards adolescents. • Interventions that focus on food and meal preparation may be helpful, particularly in areas where nutritious foods are not normally consumed and in urban settlements where there is a reliance on pre-prepared food. Available food technologies and interventions to improve storage could make cooking less arduous and time consuming for women and girls.
Household economies	• Raising awareness about the importance of an adolescent girl's nutrition should focus on her strength and role in the (household) economy (in terms of immediate value) and on the importance of her own health and her health for the next generation (future value). • Adolescents and their caregivers must be better informed about the most cost-effective healthy foods available to them. • Household decision-makers and 'financial controllers' should be engaged so they allow and actively encourage healthier food options to be priority purchases. In refugee communities, messaging regarding food rations and cash payments should also be targeted towards adolescents to improve their nutrition and general wellbeing. • Healthy food is often more expensive, or at least is perceived to be, so it may be may useful to explore reducing costs associated with healthy unprocessed products whilst simultaneously decreasing access to non-nutritious, unhealthy foods. • The lack of household resources in times of scarcity linked to drought, floods and failed harvests means that adolescents are at risk of missing out on healthy nutrition during the critical years of adolescence. Policies invoking the activation of social safety nets and food assistance should be strongly linked to scarcity, and should purposively consider adolescent issues and constraints.
Income generating activities	• Income-generating activities are often prioritised over school attendance, and adolescents and their families need strong incentivisation for this age group to continue formal education. Social protection mechanisms such as cash transfers may help address poverty and underlying issues that can result in families sending their adolescents to work. • Many of the income-generating activities adolescents engage in require a high level of energy expenditure and are exploitative. Safe income-generation opportunities should be made available but designed around keeping adolescents in school (e.g. scheduled for non-school hours and weekends). • For older/out-of-school adolescents, vocational training that develops business skills relevant in different contexts and provides resources for start-up equipment is a key avenue for constructive engagement. Vocational training should be tailored to actively target and empower adolescent girls and women. • Some adolescents eat lunch at their workplace and many eat snacks to substitute lunch if they cannot afford to purchase it. Engaging with workplaces provides a valuable opportunity that programmes aimed at increasing adolescent nutrition should carefully explore and manage.

Climate and agricultural practices	• Recognising the ramifications of climate stress on adolescent health and nutrition and how it affects their education and future employment is critical. Poverty is exacerbated by climate change-induced vulnerabilities. • Humanitarian assistance and policies invoking the activation of social safety nets and food assistance should be linked to drought and food insecurities and should purposively consider adolescent issues and constraints, and the role of adolescents in household and societal structures. • Production of a variety of foodstuffs should be encouraged, alongside pastoralist practices as appropriate. This should include improved irrigation, better management of food and harvest losses, and social protection via cash transfers. • There is a need for more resilience work that better protects land for livestock and crops. Livestock and crop insurance systems should be considered. • New seed varieties and agricultural technologies may be beneficial in reducing the work burden that falls on women and girls responsible for cultivating family crops.
Sexual and reproductive health	• Reducing adolescent pregnancy and early marriage is key to ensuring the healthy development of adolescent girls, and is linked with poverty reduction and education promotion efforts that have been proven to have a positive impact on adolescent nutrition and broader wellbeing. • Raising awareness around good nutrition during pregnancy needs to be prioritised. In parallel, initiatives should improve antenatal care, delivery practices and postnatal care. Delivery with skilled attendance and exclusive and continued breastfeeding should be actively promoted and interventions should seek to assuage fears around having large babies (and therefore discourage a restrictive diet during pregnancy). • Cheap, safe and healthy snack foods should be made available for pregnant adolescents and consideration given to snacks in terms of their value as food and as a delivery mechanism for micronutritent supplements.
Social norms	• Girls and young women have heavy workloads that contribute to their high energy expenditure and often limit the time they have available for other activities, including school attendance, homework, socialising and recreation. Their domestic duties appear to be less valued than income-generating work. Advocacy efforts should highlight the importance of the contributions that girls make to their households, whilst interventions should explore how to a) reduce their domestic burden by supporting a greater division of labour within the family unit and introducing technological advancements that could reduce their workload; and b) break gender-defined roles and responsibilities so that girls have credible access to multiple opportunities. • In many contexts, ingrained gender norms related to food allocation within the household prevent girls' healthy nutrition. Yet gendered social norms affect boys as well as girls, and should be purposively accounted for in programming to ensure all adolescents receive appropriate provision. • To address restrictive food practices, engaging with key influencers (including fathers, husbands and mothers-in-law) is critical.
Security	• Whilst it is important to invest in longer-term solutions to security issues, in the short- to medium-term girls in unsafe urban centres must be reached where they are and not left behind due to their constrained environment. • Greater awareness is needed around the problems of sexual violence against adolescent girls. In line with other adolescent-focused interventions, measures should empower girls to protect themselves (e.g. through personal protection skills and self-defense), and perpetrators should be brought to appropriate justice. • Investment should be made in sport and recreational activities for adolescent girls and boys. Whilst this would help overcome the sedentary nature of adolescents in insecure uban centres, it would also provide them with a safe platform to meet peers, form social relationships and develop a healthy body and mind. Engaging boys and girls through sport activities would help promote the importance of health and nutrition for strength and fitness and could be positioned as a positive alternative to alcohol and substance abuse. • In Kenya particularly, links between social norms for herders, cattle-raiding activities, nutrition and community food security merit further investigation.
Service delivery issues	• Health facility services should actively try to reach adolescents and sustain engagement. Services should be carefully designed to ensure this age group perceives them to be relevant. Normalising health facility services is important and should aim to shift association away from sexual reproductive health issues that are negatively perceived. In parallel, the provision of quality care for adolescents must be further strengthened and an appreciation for preventative services developed. • Outreach visits to the community can be beneficial in overcoming stigma associated with facility attendance and to 'build bridges' between facilities, services and adolescents. • The quality and delivery of school meals need to be improved, including consistency in availability, nutritional value and portion size. • Expanding school meal programmes to include adolescents at secondary-school level may be a positive driver to keep this target group in school, although for this to be effective, the perceived value of adolescent education must be built at the community level. • Structural weaknesses in the school system (e.g. storage, workload of teachers, water, sanitation and hygiene) need to be overcome if schools are to be an effective delivery platform. Despite the potential value of school as a platform for sustained engagement, it must be recognised that schools do not reach all adolescents or the most vulnerable, and interventions must therefore be combined with engagement channels that can reach out-of-school adolescents, including mature minors. More must be done to guarantee the safey of children attending school and to reduce the risk of school-related violence.

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