

**UNDERSTANDING PATHWAYS TO BETTER NUTRITION
AT DISTRICT LEVEL: LESSONS FROM UGANDA****Agaba E^{1*}, Ghosh S¹ and J Griffiths^{1,2}****Agaba Edgar**

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ABSTRACT

For countries looking to implement multisectoral nutrition plans, it is critical to understand what works and how programs should be delivered and scaled-up in each context. Programs can learn from each other on how to adapt to new information, evidence and events related to scaling-up and district stakeholders can play important roles in implementation of this multisectoral plan. As part of "Pathways-to-Better Nutrition" (PBN) case study conducted by USAID/SPRING Project, this research set out to explore district leaders' perceptions of the nutrition situation, programs and opportunities for integration. Qualitative data were collected through key-informant interviews and focus group discussions. Thirty-five district and local leaders belonging to district and sub-county multisectoral nutrition committees in Kisoro and Lira were interviewed. Grounded Theory Approach was used to identify themes for coding and key domains included: learning, adoption and evidence of scale-up; adoption of innovations/interventions to local context, financing of nutrition-sensitive activities and long-term planning. Additionally, quantitative data collected by Feed the Future Innovation Lab for Nutrition were analyzed in each of the districts to provide nutrition snapshots. Malnutrition in the study districts was worse than the national average for stunting, anemia and women's underweight. The majority (91%) of respondents were not familiar with these nutrition statistics. Both study areas have formed nutrition multisectoral working groups (District Nutrition Coordinating Committees) and have developed management structures to implement interventions. Government stakeholders from every nutrition-sensitive sector referred to the lack of clear government programs that support nutrition directly in local policy environment. Key agricultural-related programs are focusing on wealth creation, value-addition or increasing agricultural productivity without nutrition lens (not "nutrition sensitive"). Nutrition is not on the 'list' of key priorities of district health departments unlike HIV/AIDS, malaria or sexual reproductive health. About 69% respondents believe they lack operational capacities and soft-power skills to design, implement and manage nutrition interventions such as leveraging of resources and being able to convey evidence. The understanding of "Scaling-up Nutrition" also differed by respondent, and this has resulted in different goals and measurements. Challenges related to nutrition financing were also noted, including fiscal decentralization, use of Output-Based Financing mechanisms, limited flexibility to re-allocate funds for nutrition, and lack of standard reporting procedures or implementation strategy. Efforts to address malnutrition need to be multisectoral, coupled with increased coordination of different sectors and ministries for sustained impact on nutrition outcomes.

Key words: Pathways, nutrition, scaling-up, multisectoral, coordination, nutrition action plan, district, Uganda



INTRODUCTION

Project Overview and Statement of the Problem

Uganda is among 34 countries that carry 90% of the stunting burden globally [1]. Recent data show low levels of underweight (14%), and wasting (5%) nationally, but persistent levels of stunting (33%) in children under five [2]. Malnutrition accounts for 40% of all Ugandan child deaths [3]. The 2014 Global Hunger Index (GHI) ranks Uganda 52nd out of 76 countries with the hunger situation being considered serious [4]. Uganda's economic growth and poverty reduction have not made a significant impact on reducing malnutrition over the last 20 years - and this is hindering socio-economic development, and has led the government of Uganda to develop the Uganda Nutrition Action Plan [5].

Uganda Nutrition Action Plan (UNAP), a national multisectoral nutrition plan, developed by the Government of Uganda, with the objective of ensuring adequate nutrition to all Ugandan people in order to live healthy and productive lives, is coordinated by Office of the Prime Minister (OPM) [5]. Significant efforts have been undertaken to establish UNAP benchmarks around the Scaling up Nutrition (SUN) movement [6], advocating for policy formulation and implementation and in the mobilization of resources for the enactment of UNAP. Uganda Nutrition Action Plan is overseen through different platforms and committees from the cabinet level down to the sub-county. Uganda Nutrition Action Plan includes seven key implementing ministries (Local Government, Education, Health, Agriculture, Trade, Gender, and Water¹) as well as Ministry of Finance, Planning and Economic Development, National Planning Authority, Development Partners, Civil Society Organizations (CSOs), private sector and academia.

Little is known of the district uptake of UNAP. Lack of information at the district level impedes the effective understanding of national plans such as the UNAP, which are considered as local multisectoral leadership initiatives for delivering sustainable solutions in improving maternal and child nutrition.

Effective implementation of the UNAP's activities cannot take place without full input from all stakeholders including districts. Therefore, for countries looking to implement multisectoral nutrition plans, it is critical to understand what works within each district's context. Countries can also learn from each other on how to adapt to new information, evidence and events related to scaling-up [7] and district stakeholders can play important roles in implementation of similar multisectoral plans.

As one component of the "Pathways to Better Nutrition" (PBN) case study of the Strengthening Partnerships, Results, and Innovations in Nutrition Globally (SPRING) Project in Uganda, this research activity set out to explore district leaders' readiness, challenges of implementing multisectoral programs and opportunities for integration under UNAP in two districts. This work also investigated opportunities for coordination between different district sectors because of the multidimensional nature of malnutrition at the district level.

¹Not an official signatory to the UNAP, but has since become involved



Aims and Objectives

The overarching aim of this research was to understand implementation facilitators and challenges to rolling out the UNAP at the district level, in two districts. The specific objectives were to:

- a. Assess a snapshot of nutrition and public health situation.
- b. Qualitatively assess roles of districts in UNAP implementation and scale up of nutrition interventions.
- c. Understand district leaders' perceptions of nutrition situation in study districts.
- d. Provide necessary recommendations.

Methodology

Overall PBN study methodology is available elsewhere [8]. This component of the study focused on comparing qualitative data collected via the PBN study to quantitative survey results collected via the Feed the Future Innovation Lab for Nutrition [9]. Qualitative data were collected via key informant interviews and focus group discussions between December 2014 and January 2015 from district leaders in both Kisoro and Lira districts, and from the multisectoral nutrition committees in two sub-counties.

Study locations

Two study districts were selected to explore the rollout of the UNAP at the district level. These districts are not meant to be representative of all districts in Uganda; rather, they are examples of districts that have already begun the UNAP rollout process and are actively addressing malnutrition. In this way, Kisoro and Lira can be considered "high performers."

Lira district: is located in Northern Uganda and is bordered by the districts of Pader and Otuke in the North and North East, Alebtong in the East, Dokolo in the South and Apac in the West. The total land area of Lira district is 7,200.7sq km [10]. The district population is 408,043 people of which 75.9% is rural, average household size is 4.9, sex ratio is 93 males per 100 females and the average population growth is 2.88% [11]. The economy of the district is mainly based on agriculture, with 81% of the population engaged in subsistence farming. Other sectors in the economy include agro processing industries (3.1%), commercial activities and banking (15.9%) [10].

Kisoro district: Kisoro district is tucked away in the southwestern corner of Uganda. It is bordered by the Democratic Republic of Congo to the west, Rwanda in the south, Kabale in the east and Kanungu in the north. The total land area of Kisoro district is 729.6 sq. km. The district is made of 13 sub-counties and one Town Council. The district is mountainous and hilly with an average of 1,980 metres (6,500 ft.) above sea level. The district's economy is very poor with over 89% of the households depending on subsistence farming. The district also depends on tourism from Bwindi Impenetrable National Park (BINP) and Mgahinga Gorilla National Park (MGNP) for earnings. The 2014 census indicated that the district had a total population of 287,179 of which 93.9% was considered rural with a sex ratio of 81.3 males per 100 females and average household size of 4.5 [11].



Data Collection Process

Qualitative data were collected from 31 district leaders with district and sub-county management and leadership being interviewed. All those identified and interviewed belonged to district or sub-county Multisectoral Nutrition Committees. All the interviews were coordinated by the researcher together with support from the District Nutrition focal-point person and SPRING Country staff.

Study Tools used

Key-Informant Interview (KII) guide was developed and pre-tested by SPRING research team in 2013. The KII guide included three general thematic parts. The first one captured the perceptions of the nutrition situation in the districts under study, thereby answering most parts of objective (c). It also investigated the perceptions about causes of poor nutrition, gaps and interventions to avert the situation. In the second part, the interviews focused on roles of the district in implementation, coordination and implementation of nutrition related activities. The study also discussed more on the role of the District Nutrition Coordination Committee (DNCC), what and how nutrition sensitive activities in districts are to UNAP. The Last section was on perception of scaling-up of nutrition, how the districts were committed to UNAP principles, and what changes were needed to improve nutritional status. Both the 2nd and 3rd portions of the interviews focused on answering objective (b and c) of the study. In total 31 KI interviews were held in both districts as indicated in Table 1.

Data Documentation Process

Where consent for recording was given, interviews were recorded with a Sony MP3 Portable Digital Voice Recorder (Model ICD-PX333 and 312). In addition, notes were taken by the researcher and hired note takers in each district. Handwritten records were immediately rewritten and typed after interviews in MS-Word. All interviews were in English. All recorded voices were transcribed verbatim and prepared in Microsoft Word document and shared with the study team. Interviews lasted approximately 1.5-2.5hours.

Qualitative Data

The identification of salient themes, recurring ideas or language and patterns guided the researchers to build over-arching themes in the data and later guided the identification of emerging themes and later used Grounded Theory Approach [12] to identify themes to code data.

Quantitative Data

In addition, analysis of secondary quantitative data from the two study districts collected in 2012 by the Nutrition Innovation Lab [9] of Friedman School, Tufts University was done. This survey was part of a study to understand the effectiveness of ongoing interventions such as the USAID Community Connector, which is an integrated nutrition program that is aligned to UNAP objectives. The survey focused on the household, the mother of the household (and/or primary care giver), one index child aged 6 to 23 months, and all other children between the ages of 0 and 59 months. Descriptive statistics of individual maternal & child data were computed (n=600 households) in each of the study districts to provide nutrition related snapshots to answer objective (a). The study



researchers used Statistical Package for the Social Sciences (SPSS), version 22 for this analysis.

Ethical Considerations

The qualitative research protocol and tools were approved by the Institutional Review Board (IRB) of John Snow Inc. (JSI) and Makerere University School of Public Health in Uganda. Permission was obtained from the respondents both for participating in the study (or be voice recorded) and informed consent was obtained from all key informants. For the quantitative data, ethical approvals were sought and obtained from Makerere University School of Public Health, the Uganda Science and Technology Council, Tufts University, and the Harvard T.H. Chen School of Public Health.

STUDY FINDINGS

Nutrition situation and key selected drivers of better nutrition at district level

In this section, a presentation on the nutrition situation with a focus on children under 5 years of age and women in their reproductive age is given. Malnutrition rates in the study districts are worse than the national average as reported by Uganda Demographic and Health Survey (UDHS) (2012) for stunting (33%), anemia (children-49.3%, women-23.0%), and women's underweight (12%). Stunting rates are also high in Kisoro affecting over 50% of children under five years of age compared to Lira where it is at about 19%. Observed underweight prevalence among children <5 years was also higher in Kisoro compared to about 10% in Lira. However, the maternal underweight among non-pregnant women was higher in the northern district with 11%. The rate of overweight women is higher in Kisoro as compared to Lira. Both districts have higher rates of anemia in children (55% in Kisoro and 59% in Lira), while in women the rates are different with Lira having about a third of the women categorized as anemic.

Minimum dietary diversity

This is defined as the proportion of children 6–23 months of age who receive foods from four or more food groups out of the total children 6-23 months of age. This definition is based on the Feed the Future Indicator Handbook: Definition Sheets, 2011 [13]. The foods included in the tabulation: a) grains, roots and tubers; b) legumes and nuts, c) dairy products (milk, yogurt, cheese), d) flesh foods (meat, fish, poultry and liver/organ meats), e) eggs, f) vitamin-A rich fruits and vegetables and g) other fruits and vegetables.



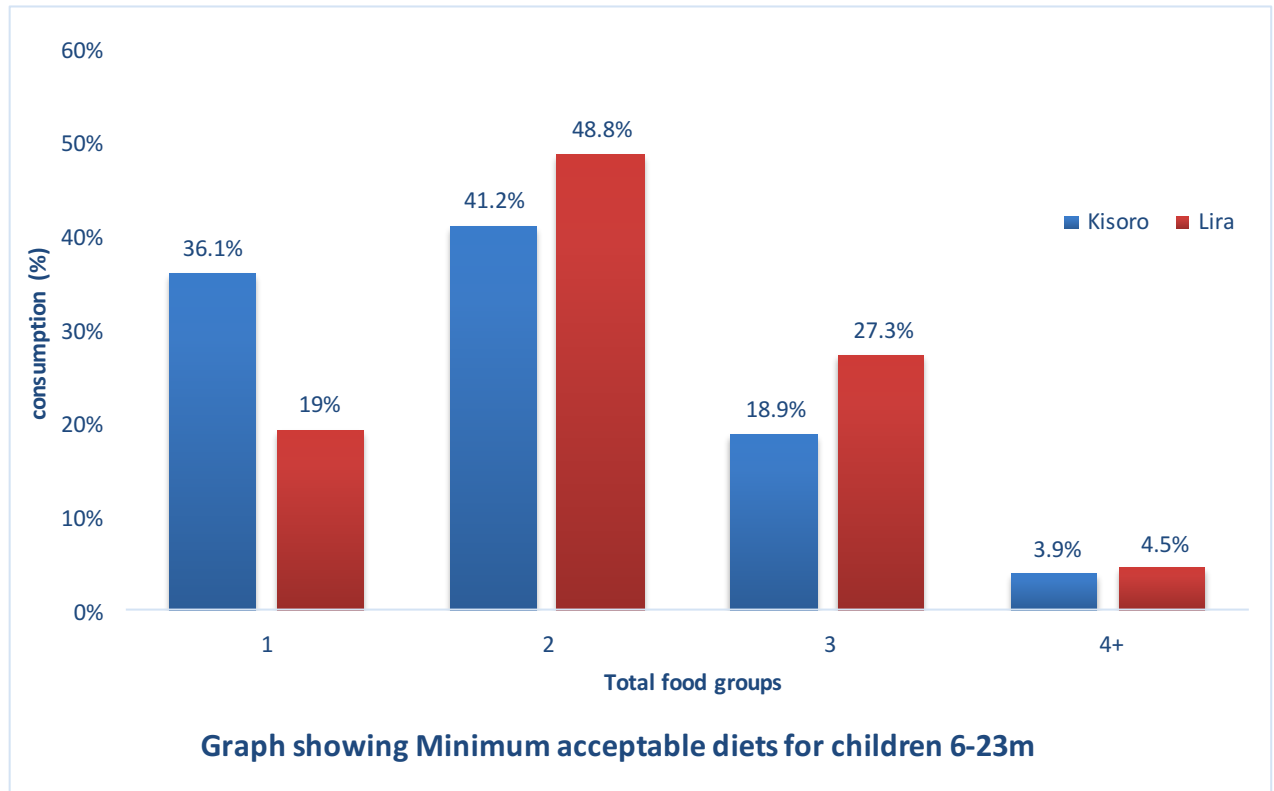


Figure 1: Minimum acceptable diets for children 6-23 months

Main food groups that children 6-23 months consumed

This research also investigated infant and child feeding practices in the study area by looking at the main food groups consumed summarized in Figure 2.

- **Fruits & vegetables:** The fruit and vegetable food group consumption (of non-vitamin A) was low in both districts: Lira (29%) and Kisoro (44%) reported as having consumed at least fruit or vegetable in diets.
- **Animal protein foods (meat, fish, poultry and liver/organ meats):** Whereas meat, poultry and fish make up the main source of animal protein in most Ugandan meals, consumption is very low in the investigated districts (Kisoro at 2% and Lira at 10%).
- **Dairy (dairy products; milk, yogurt, cheese):** The dairy food group is comprised of dairy products that are high in calcium. All types of yogurt, most cheeses and all liquid milk products are part of the dairy group. The consumption is worse than meat products (0% in Kisoro and just 1% in Lira).
- **Eggs:** Consumption of eggs was also very low with only 1% in Kisoro and 4% in Lira consuming eggs.

- **Grains, roots and tubers:** In Kisoro, the consumption was 91% as compared to 75% in Lira as part of the complementary or weaning foods. This constitutes the greatest intake of food among the children under 2 years, since these are the major staple food group in the study districts and Uganda in general.
- **Legumes and nuts:** Legumes and nuts constitute the highest source of proteins in many weaning foods in Uganda. The consumption of legumes and nuts is high in Lira district (81%) as compared to 37% in Kisoro district.
- **Vitamin-A rich fruits and vegetables:** The consumption of Vitamin-A rich fruits and vegetables among the children was 16% in Kisoro and 19% in Lira. These included pumpkins, carrots, squash, and orange-flesh sweet potato. They also included ripe mangoes, ripe papayas or another vitamin-A rich fruits.

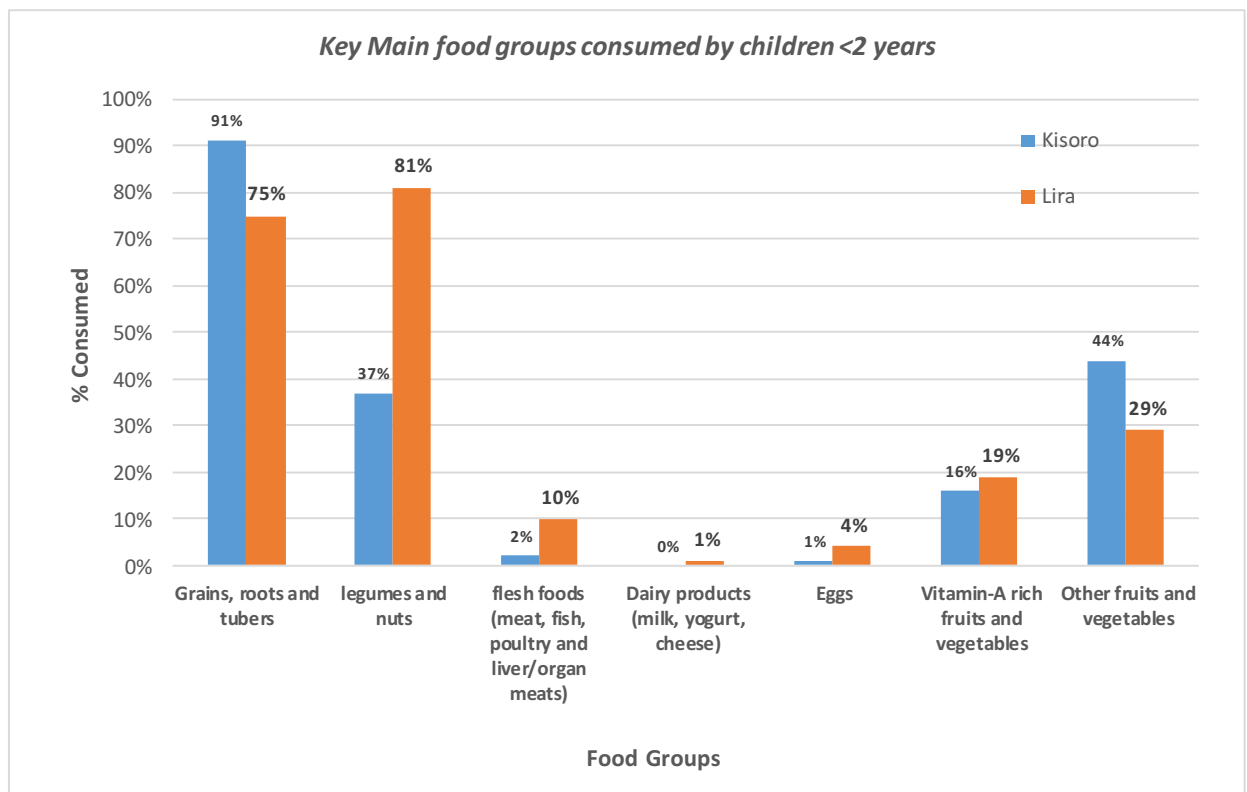


Figure 2: Main food groups consumed by children <2 years in Kisoro and Lira

Barriers of better nutrition by selected UNAP objective areas

Because of high rates of malnutrition, the research investigated the probable drivers responsible and these are presented in Table 3.

Antenatal care (ANC) attendance among pregnant women in Kisoro is still low (35%) attending four or more ANC visits compared to Lira at 56%. Other health related



indicators are better in Lira as compared to Kisoro including family planning, access to protected water sources and diarrhea rates. Food security and nutrition related indicators were not different; about 10% of households in Kisoro were classified as severe or moderate hunger as compared to Lira (8%). Consumption of foods from animal sources is very poor in Kisoro (5%) compared to Lira at 21%.

Role of districts in implementation of UNAP

Both districts have formed and activated multisectoral working groups, District Nutrition Coordination Committees and Sub-county Nutrition Coordination Committees (DNCCs and SNCCs). Kisoro district has rolled out the multisectoral working group to parish level with formation of Community Mobilization Teams (CMTs). They have also developed a nutrition action plan and priced it. Both districts are engaged in nutrition promotion and community empowerment activities. They have increased access to Ready-to-Use Therapeutic Foods at lower tier health centers for treating acute malnutrition.

Challenges that districts face in implementing UNAP

Lack of nutrition-sensitive programs

There are a considerable number of nutrition related opportunities that exist in districts, especially in the agriculture sector. However, discussions with district officials and review of district development plans indicated that key agricultural-related programs such as National Agricultural Advisory Services (NAADs) are focusing on wealth creation, value-addition or increasing agricultural productivity without a nutrition lens and, thus, are not “nutrition sensitive”. As one district official pointed out *“I wanted to point out that NAADS does not necessarily represent nutrition interest; actually, it’s mostly for income... and I don’t think it will make changes [nutritional] but mainly for food production...”*

Among the district officials interviewed, one also commented: *“I actually doubt that agricultural interventions such as promotion of animal source proteins are working [to improve nutrition] ... I would add that we would not see much because it could be sold and we cannot stop people from selling their produce...”*

Nutrition is also not on the ‘list’ of key priorities of district departments; for instance, in the health department most of the focus is put on HIV/AIDS, Malaria or Sexual & Reproductive Health issues. District leaders from the nutrition-sensitive sector referred to lack of clear government programs that support nutrition directly, hence referring to nutrition as an *“orphan”*

Limited coverage of nutrition programs

Districts reported that the coverage of nutrition interventions is still a *“drop in the ocean”* on the most- at- risk communities. This is worsened by lack of harmonized understanding of *“Scaling-up Nutrition”* by district officials. No officials had adequate evidence demonstrating the scale-up of effective nutrition actions or documentation of best practices of scale-up proven interventions in their districts. No district or local leaders also demonstrated evidence to exist for scaling-up of nutrition programs. District officials indicated they are struggling with enhancing and expanding the quality and coverage of



nutrition-specific interventions. In fact, districts have not maximized nutrition sensitivity that multisectoral district interventions bring especially from key nutrition sectors such as agriculture, Water, Sanitation and Hygiene (WASH) or community development.

District nutrition financing stringent conditions

One of the other challenges districts faced are conditions on fiscal decentralization and the use of Output-Based Financing mechanisms by the Ministry of Finance to monitor funds disbursed to districts. While fiscal decentralization gives districts powers, funds disbursed are mainly conditional grants with limited flexibility to re-allocate funds, and districts do not have sufficient responsibility over budgetary resources from the central government to reallocate and channel resources to fund nutrition related work even when necessary. As one district official indicated: *“Operating a fixed budget and fixed funds makes implementation of multisectoral approach a bit complicated”*

Even when districts would prefer to re-align some funds generated locally for nutrition-related work, there are other bottlenecks such as lack of specific nutrition indicators in the Out-Based Tool (OBT) developed by the Ministry of Finance to base their expenditure. Hence districts do not see the reason to implement such activities that will not be rated for future funding even when OPM obliges districts to report using OBT system.

Limited financial resources

Related to above, the question of lack of financial resources to implement nutrition activities is universal. With the scrapping of graduated tax, districts have been left without a source of reasonable revenue to fund their activities. Districts have to depend on a central government that supports about 90% of district development programs. *“... you remember Graduated tax was scrapped and that was our main source of income. We are hands tied waiting for the Center [central government] to release something that is when we can talk...”*

Case: Muramba Sub-county in Kisoro district has a population of 36,355 people [12] and received 26 million shillings allocated for activities (approx. \$10,000) in 2014. This means that each individual will be budgeted 715sh a year (\$~0.3 per person/year) from this government share.

Limited institutional and individual capacity for integrating nutrition multisectorally

Most district officials see integrating nutrition multisectorally as new, hence district departments work independently on most of the programs including on surveillance systems. At the individual level, the operational capacities (hard skills) are weak, especially the capacity to design, advocate, implement, and manage nutrition-sensitive programmes collaboratively. District officials agree that they lack training and skills in integrating nutrition in other sectors. *“We can still continue implementing this but there is need to strengthen operational issues including DNCC capacity to understand nutrition operations...”* About 69% of the respondents believe they lack operational



capacities and soft-power skills to design, implement and manage nutrition interventions such as leveraging of resources; “*Whereas we have received some training, we lack skills to comprehend some nutrition terms*”. Hence, most district leaders do not feel confident about presenting nutrition issues or convincing other government officials to take nutrition as a key priority.

Community and household driven bottlenecks (gender, alcoholism, land conflicts and ignorance) have an impact on nutrition programming and integration. While districts as institutions of service delivery have challenges, there are also community and household driven bottlenecks that impact nutrition programs, such as alcoholism, low education level (ignorance), poor family planning use, land conflicts and gender inequality.

In Kisoro district, Batwa pygmies’ community has remained landless after being pushed out of Bwindi Impenetrable Forest in 1992 when it became a national park and World Heritage Site. It has also fragmented land portions resulting in conflicts, “*land issues have bred land conflicts and these need attention... some kind of land tribunal... I believe nothing can be successful unless we solve the land question...*”

Alcoholism is affecting the implementation of nutrition programs as it has direct impact on nutrition outcomes and should be addressed. “*...Even when we increase agriculture output, there are community challenges that will derail our efforts like these alcoholics.... alcohol not only causes malnutrition; it affects the whole family.... so funds that were supposed to buy food for children is consumed; it [also] destroys the body.... So when handling alcohol, we have to look at it both at individual and family and community levels because these ones [alcoholics] recruit others...*”

The question of gender inequity in decision making and discrimination in a male dominated society affects nutrition programs as pointed out by a female district official “*...It’s the man who decides for everyone in the household, that is whether to sell it [produce] or not...I wish we could have like a national policy stopping men from selling their women’s produce.*”

To explain the gender related discrimination in communities, a district official stated “*...my neighbor, a woman had a pig, and then she sold it [but], she has spent almost 2 weeks out of the house because the man is threatening to kill her...because she did not declare the money [from selling her pig] and this is a man who never even contributed in feeding that pig...*”

DISCUSSION

This study has identified key implementation facilitators and challenges of UNAP at district level in two districts. Such challenges range from inadequate dietary diversified foods to poor government and district priorities and lack of nutrition sensitive programs. Again, while OPM and its key partners have helped to form multisectoral nutrition committees at district level since 2013, districts are still struggling with coordination, setting up priorities and technical backstopping. Hence, focusing on improving coordination with national level structures can empower the district level coordination



committees to carry out the UNAP activities. Because districts still lack the skills needed to identify, start and run nutrition interventions, most of the investments at the district level are less effective, because they lack human capacity needed not only the nutrition know-how, but a set of soft-power skills such as advocacy and nutrition planning to convince the government to fund more nutrition work. Because the actual expenditure for nutrition interventions is weak, as demonstrated by the funds allocated to nutrition activities, it means that the districts need to identify opportunities in agriculture to exploit such as Food- Based Approaches of Nutrition.

These findings suggest most government agricultural programs at the time of the interviews focused on wealth creation, value addition and increasing agricultural productivity and were designed without looking at nutritional status as an outcome. Increased *political attention* on the nutrition-sensitivity of agricultural programs needs to be raised to change this situation. The district level politics seemed to make implementation of ordinances and by-laws difficult.

There are still many questions to answer on how to increase momentum at the district level to address malnutrition. Income growth is necessary but not sufficient for undernutrition reduction [14]. There is need to create an enabling environment within districts by allowing them to have a say in the design of nutrition-sensitive programs.

Because there are poor nutrition surveillance systems at district level, it becomes very difficult for districts to develop tangible actions through formulation, adaptation and application of UNAP because of lack of enough data. Hence, districts need to be supported to develop proper nutrition monitoring systems to enhance districts' ability to effectively plan, monitor and implement nutrition programs. Apart from data bottlenecks, no work has been done on district multisectoral committees to study their cost-effectiveness. Darmstadt *et al.* [15] noted that "a major obstacle to program success is the nearly complete lack of information on the cost, effectiveness and process of scaling up interventions in a health systems context." This stands true for all program interventions, whether they are uni-sectoral or multisectoral and integrated in nature and should be done. Establishment of a 'Uganda Nutrition Commission' tasked with coordination of funding mechanisms, coordination, monitoring and supervision of nutrition interventions like how HIV/AIDS was given a commission through an act of parliament in the early 1990s would put nutrition at a higher level.

CONCLUSION

Because malnutrition is multidimensional, efforts to address it must be multisectoral, as increased coordination and alignment between sectors and ministries are vital for sustained impact on nutrition outcomes. Even with the formation of district multisectoral plans (which is a sign of commitment to implementing nutrition interventions), efforts to put them in practice remain a significant challenge. Their practical implementation down to the community level remains a tricky process and, therefore, more efforts are needed to assist districts with setting up priorities for implementation. Some districts still have not recognized malnutrition as a development challenge and hence district leaders are not prioritizing malnutrition. Capacity for implementing nutrition interventions at the



basic operational level is often insufficient and the current nutrition programs implemented in at district level are not enough to bring out any meaningful change. Gaps related to the fiscal decentralization, challenges with OBT and lack of clear district priorities which are related to funding gaps should be studied extensively. Thus, it is proving to be very difficult for the districts to pinpoint key critical needs of the district planning for nutrition activities. The lack of nutrition indicators on the district monitoring checklist, the number of additional competing work duties for district staff and limited funding contributes to this challenge. Strengthening structures and improving district leader knowledge through short-term courses on nutrition governance, budgeting and integrating multisectoral responses to nutrition to district and community leaders would provide a springboard for district leaders to not only prioritize nutrition but also strengthen the coordinating body. There is need for putting more attention on identifying programs that have proven to work, learn from them, and scale-up activities to improve coverage of direct nutrition interventions.



Table 1: Key Informant Interviews and Focus Group Discussions

Kisoro district KII	Lira district KII
Chief Administrative Officer (CAO)	District Nutrition focal point person
District Nutritionist	District Biostatistician
Sub-county chief Muramba sub-county	HMIS Focal point person (District Health Office)
Chairperson LC11 Muramba sub-county	District Lab focal person (District Health Office)
Sub-county accountant Muramba sub-county	Production and Marketing Officer
Parish Chief Muramba sub county	
Sub-county Chief Kyahi & Muramba sub-counties	
Kisoro Focus Group Discussion team	Lira Focus Group Discussion team
District Nutrition focal point person	Community Development Officer
District Health Officer	District Education Officer
District Development Officer	District Agriculture Officer
District Commercial Officer	Assistant District Health Officer (MCH)
District Water officer	District Inspector of Schools
District Agricultural officer	District Production and Marketing Officer
District Health Educator and VHT focal person	District Planner
Community Development Officer	Nutritionist attached to Uganda URCS
District Planner	
Deputy CAO	
Principal Assistant Secretary	

Table 2: Nutrition indicators in study districts and UNAP targets

<i>Indicator</i>	<i>Kisoro</i>	<i>Lira</i>	<i>UNAP National Target (2016)</i>
Underweight, children under 5 yrs	14.2%	9.7%	10%
Underweight, non-pregnant women	2.0%	11.4%	8%
Wasting, children under 5 yrs	3.4%	6.8%	5%
Stunting, children under 5 yrs	51.4%	19.2	32%
Overweight, non-pregnant women	13.6%	7.2%	No target
Any anemia, children 6-59 months	55%	58.8	50%
Any anemia, women of reproductive age	18.2%	29.4%	12%
Exclusive breastfeeding, under 6 months	78.6%	69.0%	75%
Minimum dietary diversity children 6-23 months	3.7%	4.3%	No target
Mean number of food groups consumed by women of reproductive age	3.7	5.36	No target

Source: Nutrition Innovation Lab [9]

Anemia for women aged 15-49: Defined as Hemoglobin < 12 g/dL (< 120 g/L) & adjusted for altitude: per WHO guidelines

Exclusive Breastfeeding was determined by no food or drink other than breastmilk given in the last 24 hours

Overweight was defined as (BMI >= 25) among non-pregnant women of reproductive age in surveyed districts

Table 3: showing barriers to better nutrition at district

Barriers	Kisoro	Lira
Attend 4+ ANC	34.5%	56.0%
Diarrhea Prevalence in Children <5	43.6%	20.3%
Proper food hygiene	27.8%	28.8%
Protected water source	39.2%	79%
Family planning use	14.0%	46.4%
3+meals/day(6-23months)	64%	26%
Food secure households	9.7%	8.1%
Moderate or severe hunger	73%	55.9%
Consumption of Animal source foods	4.7%	20.7%
Poor households	78.6%	72%

Proper food hygiene is defined as achieving any four of the following five behaviors: Hand-washing with soap after defecation/toilet; After cleaning the bottom of young child; Before preparing food; Before eating and Before feeding a child

Animal foods include milk, meat, organs, eggs, fish/fish powder, or insects; 24 hours before the survey to children 6-23m



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