Use of Aggregated Lot Quality Assurance Sampling Methods in Uganda to Provide Implementation-Relevant Evaluation Data

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BACKGROUND

Data collection for monitoring and evaluation of international development projects can be difficult, costly, and time-consuming. SPRING/Uganda adapted Lot Quality Assurance Sampling (LQAS) methodology to provide up-to-date monitoring information along with district-level information for reporting and targeting nutrition interventions. This "Aggregated LQAS" methodology allows for accurate reporting at both levels to meet both monitoring and evaluation needs. Conducting the data collection in one exercise (through LQAS) rather than two leads to cost savings, in line with findings from other studies.*

METHODS

Through partnership with the USAID-funded STAR-EC project, SPRING/Uganda collected data on household characteristics, health indicators, and nutrition practices across six districts in East Central and Southwest Uganda. The survey was based on existing STAR-EC household questionnaires with nutrition-related questions drawn from the World Health Organization's Indicators for Assessing Infant and Young Child Feeding Practices (2008). Nineteen respondent households were chosen from each Supervision Area (SA). The mutually exclusive SAs were comprised of four to five subcounties or groups of contiguous subcounties in each district. Data collection was conducted by trained data collectors in local languages and supervised by SPRING/Uganda staff, STAR-EC staff, and consultants. SPRING/Uganda will repeat the data collection exercise annually, sharing costs with STAR-EC.

Key nutrition indicators included:
- Exclusive breastfeeding for children under six months
- Consumption of a minimum acceptable diet
- Early initiation of breastfeeding
- Consumption of fortified foods

RESULTS

Looking at the results graphically allowed SPRING/Uganda staff to analyze the results in the context of known indicators for each SA, including the presence of health facilities and other nutrition-supporting institutions, and use the results to tailor program implementation.

These estimates were also combined to provide estimates by geographic region or for SPRING/Uganda (intervention) and non-SPRING/Uganda (control) districts. Because this survey constituted a baseline for SPRING's work in Uganda, it was not surprising that many key indicators showed little variation by implementation status. Nor were there notable differences between geographic regions, with the exception of higher rates of exclusive breastfeeding for children under six months in the Southwest and slightly higher rates of health center deliveries and fortified food consumption in East Central. Overall, infant and young child feeding practices indicators were generally in line with national levels, but with many key indicators dipping below 50% adherence, there is room for improvement in nearly all of the IYCF practices, especially those related to complementary feeding practices.

First, SA results are aggregated to give percentage point estimates of district performance for each indicator.

Supervision Area	No	Yes	Total
KISORO A	8	30	38
KISORO B	8	30	38
KISORO C	4	34	38
KISORO D	7	31	38
KISORO E	15	23	38
Total	42	148	190
		77.9	
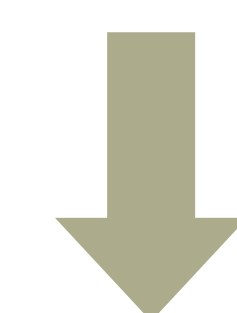
SA results are then compared to an LQAS decision rule, defined by sample size and district coverage.

|	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%	85%	90%	95%	100%
10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12	2	2	3	4	5	5	6	7	7	8	8	9	10	11	ND
13	2	3	3	4	5	6	6	7	8	8	9	10	11	11	ND
14	2	3	4	4	5	6	7	8	8	9	10	11	11	12	ND
15	2	3	4	5	6	6	7	8	9	10	10	11	12	13	ND
16	2	3	4	5	6	7	8	9	9	10	11	12	13	14	ND
17	2	3	4	5	6	7	8	9	10	11	12	13	14	15	ND
18	2	3	5	6	7	8	9	10	11	11	12	13	14	16	ND
19	3	4	5	6	7	8	9	10	11	12	13	14	15	16	ND
20	3	4	5	6	7	8	9	11	12	13	14	15	16	17	ND
21	3	4	5	6	8	9	10	11	12	13	14	16	17	18	ND
22	3	4	5	7	8	9	10	13	13	14	16	16	18	19	ND
23	3	4	6	7	8	10	11	12	13	14	16	17	18	20	ND
24	3	4	6	7	9	10	11	13	14	15	16	18	19	21	ND
25	4	5	6	8	9	10	12	13	14	16	17	18	20	21	ND
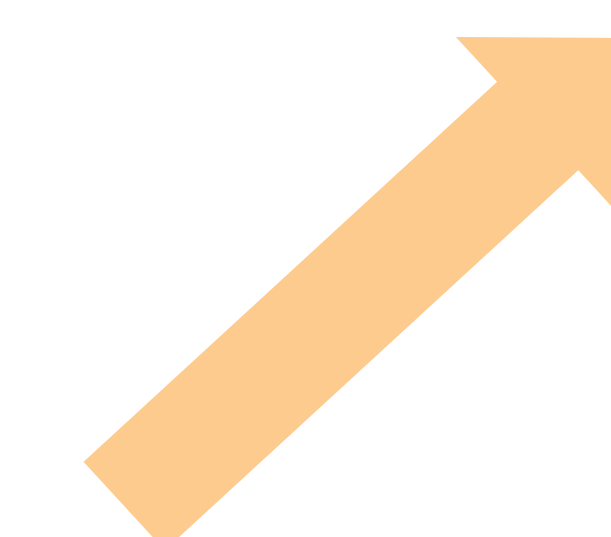
Performance against the decision rule categorizes an SA as above or below the district average.

Early initiation of breastfeeding: % of children born in the last 24 months who were put to breast within one hour of birth

	Kisoro	Ntungamo	Namutumba
A	Average	Average	Above Average
B	Average	Average	Below
C	Above Average	Average	Average
D	Average	Average	Average
E	Below	Average	Average
District total	77.9	89.0	76.3
Obs. Range	23–34	31–36	23–37

Finally, results are mapped to facilitate program monitoring and planning.

Breastfeeding within one hour of birth
Kisoro District LQAS results

Above average
Average
Below average
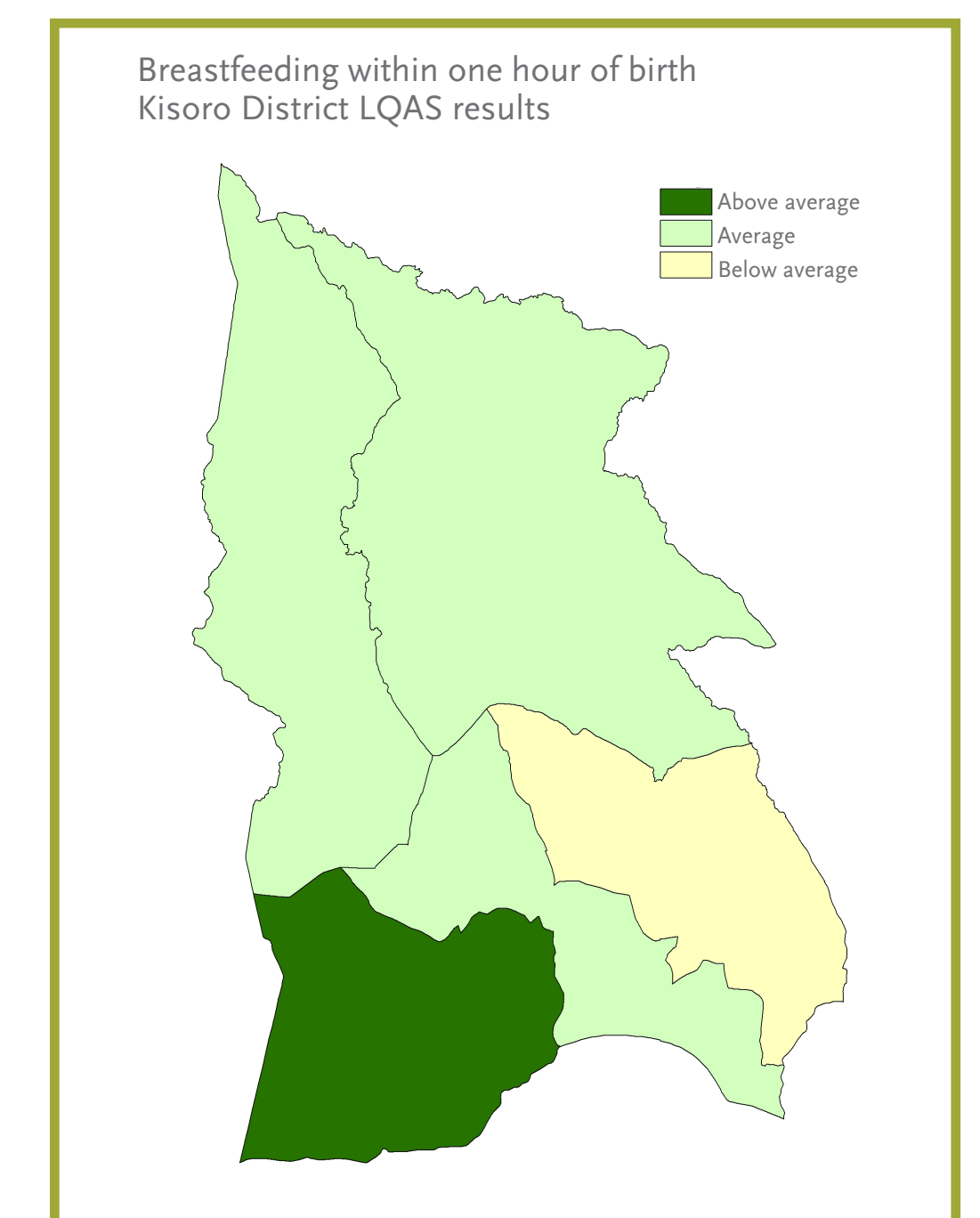
CONCLUSIONS

The Aggregated LQAS methodology provides programs with a method for collecting evaluation data across large areas that is also relevant for monitoring and improving local implementation of programs. While still a resource-intensive endeavor that requires program support for implementation and analysis, by allowing for smaller sample sizes this option is less costly than conducting surveys to provide point estimates at the local level.

This option is also more useful for program monitoring and implementation than surveys that do not allow disaggregation of results to programming-relevant levels. With annual data collection through the Aggregated LQAS method, SAs will get annual feedback on their performance, while project management can track differences between intervention and control districts.

* Biedron, Caitlin, Marcello Pagano, Bethany L. Hedt, Albert Kilian, Amy Ratcliffe, Samuel Mabunda, and Joseph J. Valadez. 2009. "Lot Quality Assurance Sampling (LQAS) and the Mozambique Malaria Indicator Surveys." http://biostats.bepress.com/cgi/viewcontent.cgi?article=1115&context=harvardbiostat.

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