

UNIVERSITY OF MINNESOTA



The Whole Village Project

Summary of Leguruki, Kingori, Malula Samaria, and Njoro in Arumeru District

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INTRODUCTION

The purpose of this report is to present district officials and local leaders with multi-sectoral data across several villages in this district. We hope these data may be useful in seeing the strengths and weaknesses of different sectors and the variation across villages. These data may be useful in prioritizing future development projects. The villages represented here were selected by our donors for their project purposes and therefore they cannot be seen as representatives of the district. The data however, illustrate the diversity of economic and social development activities occurring across villages in the district.

The Whole Village Project (WVP) is collecting and analyzing comprehensive data at village level over an extended period of time. A collaborative project between Savannas Forever Tanzania (SFTZ), a Tanzanian NGO, and the University of Minnesota, USA, the Whole Village Project has a **vision** to work with people in rural Tanzanian villages to acquire and use knowledge for improving long-term health and well-being while sustaining natural resources. To achieve this goal, quantitative and qualitative data are systematically collected in villages across northern Tanzania by the Savannas Forever team in partnership with staff from the National Institutes of Medical Research (NIMR) and the Tanzanian Wildlife Research Institute (TAWIRI). The data are sent to the University of Minnesota for analysis and then returned to Tanzania. The SFTZ team returns to each village to present the data to villagers for their own use and decision-making. WVP intends to return to each village every two to three years in order to assess the sustainability of development projects over time and identify best practices.

In this report, we present a summary of data collected across five villages: Leguruki, Kingori, Malula, Samaria, and Njoro villages, Arumeru District in September 2009, August 2010, and November 2010.

Key Findings

The research captured a broad range of information from five villages in Arumeru District: Leguruki, Kingori, Malula, Samaria, and Njoro. Overarching district strengths, gaps, and opportunities were pulled from the abundance of data collected and analyzed and are presented below. Detailed results and discussion are presented in Section 4.

District Strengths

There are a number of common strengths observed between the five villages. In particular, there are high rates of child vaccinations for BCG, DPT and polio, widespread latrine usage, high access to protected water

sources, relatively diverse food consumption, a moderately high HIV knowledge score, and high access to primary education.

Infant and young child vaccination rates for BCG, DPT and polio were over 94% in all five of the villages. However, vaccination rates for measles dropped to an average of 84%; given the virulence of this disease, clinic officers and health committee members should identify strategies to meet the gaps in measles vaccination. Although approximately 87% of infants and children took Vitamin A supplements, again the community should strive for 100% coverage given the low Vitamin A intake in local diets and the significant impact that Vitamin A deficiency has on child development.

Among the villages surveyed, there were a high percentage of households with latrines. Access to latrines and appropriate waste disposal reduce opportunities for communicable disease transmission and water borne diseases. Over 90% of respondents in Kingori, Leguruki, Samaria, Malula, and Njoro have a pit latrine, which is higher than the average of most other districts.

Over 80% of respondents in four of the five villages surveyed (Njoro being the exception with 23%) have access to protected water sources, meaning public taps, standpipes, and protected wells. This level of access to protected water is significantly higher than that of other districts surveyed. In Njoro, the water status of 75% of respondents is unknown.

The weekly average of different types of foods consumed by villagers in the five villages surveyed ranges between 7.6 types in Malula and 9.6 types in Kingori. The higher this number the more likely a sufficient diet is being consumed by villagers. This is reflected in the relatively high diversity of foods being consumed including grains, vegetables, legumes, fruits, and meat.

General AIDS knowledge is slightly higher than average among the five villages surveyed in Arumeru District. The average AIDS knowledge scores ranged from 4.1 to 4.8 among males and 3.6 to 4.4 among females (on a scale of 6). The scores for both males and females are slightly above that of most districts. The high AIDS knowledge scores in Arumeru district are to some degree the result of the low percentage of respondents with no HIV prevention knowledge (0-2 points). Respondents reporting no HIV/AIDS prevention knowledge were low. Again, although there is a strength here, all five communities should strive to increase HIV knowledge in order to better protect themselves and their families.

Each of the five villages surveyed reported having two or more primary schools, with the exception of Njoro which has one. Though there seems to be an abundance of schools, access to education cannot be

assumed to be universal. Additional factors contribute to access to education including teacher availability and school fees. Among the five villages, classroom to student ratios and teacher to student ratios are high.

District Gaps

Mosquito net ownership is significantly lacking in four of the five villages surveyed, the exception being Malula with 90% net ownership. In Njoro, 63% of households own at least one net, 64% in Leguruki, and 77% in Kingori and Samaria. Percentages of those that had recently had their nets dipped in insecticide treatment were even lower: 23% in Kingori, 33% in Leguruki, 48% in Njoro, 64% in Malula, and 67% in Samaria. Given the high rates of malaria in the area, increasing bed net coverage to 100% and regular dipping of nets should be encouraged.

The level of one's education is often a predictor of other quality of life factors such economic productivity, food security, and overall health. In the five villages surveyed, the quality of schools is a concern. Quality factors include a low teacher to student ratio, poor student exam results, and the limited food available at school. A meal of porridge is provided at seven of the 11 primary schools. Children are the future. However, if they are not able to access quality education their chances for improved quality of life as adults are greatly reduced.

Access to quality health services is also limited in the district. Dispensaries are found in four of the five villages, the exception being Njoro. Most respondents in this district felt the treatment at local dispensaries was extremely limited. According to men's and women's focus group discussions, malaria is the number one problem followed by urinary tract infections, typhoid, and high blood pressure. For children, the main issues in addition to malaria are diarrhea, pneumonia, tuberculosis, and malnutrition. In addition, maternal and child health services are extremely limited.

Any level of acute malnourishment among children under-five must be considered a gap. Nearly 10% of children under-five in Kingori and 13% in Samaria are underweight for their age. Leguruki, Samaria, and Njoro report stunting in approximately 27% of children under-five. In all five villages, the main source of food for children under-five is ugali, which itself cannot meet a child's nutrition needs. There was also a significant lack of green vegetables and fruit in the diet of children and the limited intake of the nutrients these foods offer affect child development.

Farming, as the main source of income, is vulnerable to the problem of soil erosion which is harmful to the sustainability and reliability of farming. Though there is little use of inorganic fertilizers, with the exception of Njoro where use of organic and inorganic fertilizers is high, there is extensive intercropping

and terracing practiced to control erosion. Leguruki, Samaria, and Njoro indicated that they had not received visits from agricultural extension officers in the past year.

Newcastle Disease is the number one cause of chicken mortality in Tanzania. Vaccination rates against Newcastle Disease are low in Arumeru District. The highest rate of the five villages, 56% of households owning chickens in Kingori vaccinate those chickens against Newcastle Disease. The lowest rate is 24% in Njoro. These rates are low given the severe consequences of infection with Newcastle Disease. Household surveys revealed that 23% to 31% of chickens had been lost to disease in the past year in these villages.

Opportunities

Three secondary schools exist in two villages among the five villages surveyed. Education committees, such as those in existence in Leguruki and Kingori, have an opportunity to work with district leaders to identify opportunities for developing solutions and improving the quality of schools in the district overall. The formation of education committees in the remaining three villages could produce improvements in the education available in Arumeru district. As education creates a foundation for overall family health and economic opportunities, prioritizing education is critical for the future development of this district.

Farmers in Leguruki, Samaria, and Njoro reported that did not receive a visit by an agricultural extension worker in the past year. Kingori and Malula both received visits from an agricultural extension worker. These agricultural extension workers typically train a small group of local farmers in agricultural best practices and established model farms (growing maize, sunflowers, etc.) as demonstration plots. The trained farmers are expected to transfer knowledge and skills learned to their own farms. Given that the most common complaints of farmers was lack of knowledge of improved farming techniques and other measures, there appears to be an opportunity to further spread agricultural knowledge from model farmers to others and improve the productivity of farming. The district should monitor the impact of the work done by agricultural extension workers.

Increasing livestock vaccination rates will reduce the rate of cattle and goats lost to disease, which is still relatively high. In addition, although many households have heard of Newcastle disease, only a small proportion of chickens are vaccinated. Therefore, villages have an opportunity to reallocate resources to increase livestock vaccination rates, which is effective in reducing livestock lost to diseases.

Households with kitchen gardens tend to have less serious food insecurity problems, though this pattern was not demonstrated in Njoro. Specifically, villages with higher coverage of kitchen gardens tend to have a lower percentage of households that went to bed hungry, ate limited variety of food, and fewer

underweight children. However, kitchen garden training remains very limited in the villages surveyed in Arumeru district. Village leaders have the opportunity to convey knowledge about kitchen gardens as a means to alleviate food insecurity.

District leadership also has an opportunity to further protect the children in the district from vaccine-preventable disease. A high percentage of children under-five in Arumeru District are vaccinated against tuberculosis (BCG), DPT, polio, and measles, as recommended by the World Health Organization (WHO). However, vaccination coverage is not universal. Given the already high level of vaccination, the district has an opportunity to reach universal coverage against vaccine-preventable disease given the proper allocation of resources.

APPENDIX B – SELECT INDICATORS BY VILLAGE IN ARUMERU DISTRICT

		Leguruki	Kingori	Malula	Samaria	Njoro
THE HOUSEHOLD AND HOUSING						
	Number of households surveyed	77	75	60	60	76
	Average household size	5.2	4.9	5.3	5.1	4
	% households in polygamous marriage (more than 1 wife)	5.1%	6.7%	6.7%	5.1%	4.0%
	% of households headed by women	20.5%	7%	19.6%	26.8%	14.9%
	% of HHs headed by single women (never married, divorced, widowed)	12.8%	5.3%	10%	73%	69%
	% of households with corrugated metal roof	97.4%	96.0%	91.7%	93.3%	94.7%
	% of households using a toilet	98.7%	96.0%	93.3%	91.7%	97.3%
	Avg time (minutes) required to collect water	25.5	31.2	166.5	302.9	19.6
	% households use firewood as primary energy source for cooking	100%	95%	90%	98.30%	98.50%
EDUCATION						
	% of all adults without education	9%	13%	10%	20%	6%
	% of household heads completed primary school	65%	59%	43%	52%	16%
	% of adult men completed primary school	75%	71%	38%	61%	69%
	% of adult women completed primary school	77%	79%	41%	63%	67%
	Average primary school teacher to student ratio	1:66; 1:45; 1:49	1:59; 1:44; 1:46	1:37	1:60	24:560
	Average primary school textbook to student ratio	10:1; 6:1; 3:1	1:7	1:3	1:5	1:15
	Average secondary school teacher to student ratio	1:19	N/A	1:37	1:24	5:260; 15:208
	Average # of years teachers stay at primary school	7; 2; 5	4; 10; 3	5 years	5 years	10 years
	Average # of years teachers stay at secondary school	2	N/A	N/A	1 year	5 years; N/A
	Ratio of female to male gross enrollment rates (primary school)	.91; .99; 1.0	.89; 1.15; .88	306:284	295:242	234:326
	Ratio of female to male gross enrollment rates (secondary school)	1.5	N/A	131:161	163:166	120:140; 208:0
HEALTH						
	% of households with at least one mosquito net	64%	77%	90%	76.7%	62.7%
	% of households with access to protected drinking water	96%	95%	97%	95%	81%
	% of households that take measures to make the water safe	67%	60%	23.3%	31.7%	41.3%
	# of hospital/dispensary/clinic in the village	1	1	Private	1	--
CHILDREN UNDER 5						
	% of infants exclusively breast fed through 6 months of age	30%	17%	11%	16%	30%
	% infants introduced to complementary feeding before 6 months	15%	23%	89%	84%	70%
	% of children whose birth mother is still alive and inside the HH	93%	91%	94%	96%	100%

		Leguruki	Kingori	Malula	Samaria	Njoro
	% of children moderately to severely underweight	0%	10%	0%	13%	2%
	% of children who are vaccinated for BCG	98%	100%	100%	96%	98%
	% of children who are vaccinated for polio	98%	100%	94%	96%	100%
	% of children who are vaccinated for DPT	96%	98%	94%	96%	94%
	% of children who are vaccinated for measles	87%	87%	75%	83%	87.5%
	% of children received Vitamin A supplement	96%	98%	69%	85%	85%
	% children with fever reported in past 3 months	85%	85%	47%	33%	38%
AIDS KNOWLEDGE						
	Avg AIDS knowledge score (0 to 6 points); men	4.3	4.3	4.7	4.1	4.8
	Avg AIDS knowledge score (0 to 6 points); women	4.2	3.6	4.0	4.1	4.4
	% of adults who know that a person can protect themselves from HIV	76%	84%	75%	70%	82%
FOOD SECURITY AND NUTRITION						
	% of households worried about food in the past 4 weeks	38%	38%	32%	25%	43%
	% of households ate limited variety of food in the past 4 weeks	53%	66%	78%	82%	80%
	% of HHs went one day and night with no food in the past 4 weeks	8%	4%	8%	7%	5%
	% of households that are currently growing kitchen garden	54%	31%	8.30%	0%	21.60%
	Avg # of days/times HHs ate meat protein in past week	1.8	1.3	3.1	2	1.2
	Avg # of days/times HHs ate legumes in past week	3.2	3.2	2.3	3.6	3.4
	Avg # of days/times in last week HH ate foods with Vitamin A	9.1	10.1	4	2.5	5.9
	# of different types of food eaten in last week OR NUTRITION DIET DIVERSITY SCORE	6.1	6.4	7.6	6.4	8.3
	Food Security Index (Scale 0 to 9 with low indicating higher food security)	--	--	3.6	3.2	1.4
ECONOMIC ACTIVITY, AGRICULTURE AND INCOME						
	Average acres cultivated per household	2.9	2.5	3.6	3.2	1.4
	Average # of cattle owned per household	2.1	1.8	2.7	1.1	1.3
	Average # of goats/sheep owned per household	1.6	1.1	7	4.2	1.3
	Average # of chickens owned per household	7.6	6.3	8	4.3	4.2
	% of HHs whose chicken are vaccinated for Newcastle disease	46%	5%	42%	28%	24%
	% of cattle lost to disease in the past 12 months	20%	18%	20%	19%	16%
	% of chickens lost to disease in the past 12 months	0.4%	0.4%	22%	26%	19%
	% of goats/sheep lost to disease in the past 12 months	0%	0%	18%	14%	86%
	% of household heads with the main occupation of farming	81%	75%	50%	82%	63%

		Leguruki	Kingori	Malula	Samaria	Njoro
	% of HH heads with the main occupation of livestock keeping	1%	1%	0%	2%	0%
	% households with bicycle	35%	25%	53%	47%	31%
	% households with radio	86%	87%	67%	52%	63%
	% households with cell phone	50%	51%	65%	43%	60%
CIVIC ENGAGEMENT AND INSTITUTIONS						
	% of HHs that participated in village assembly in past 12 mo	44%	44%	--	--	11%
	% of HHs in village gov't or committee in past 12 mo	14%	5%	--	--	19%
	% of HHs that asked village leaders for assistance in past 12 mo	12%	9%	--	--	70%
	Distance to closest major weekly market	0 (in village)	3km	3 km	6 km	5 km
	# of village committees/groups	6	7	2	0	0
	# of NGOs	5	8	5	8	2
	# of credit, banking services or VICOBA	1	1	2	3	1