UNIVERSITY OF MINNESOTA

The Whole Village Project

Village Reports for Mandi, Gidas, Boay, Mwada, Sangaiwe, and Vilima Vitatu in Babati District

August 2010

Revised June 2011 with Addendum for Sangaiwe and Vilima Vitatu

UCDAVIS UNIVERSITY OF CALIFORNIA

NATIONAL INSTITUTE FOR MEDICAL RESEARCH

TAWIRI Tanzania Wildlife Research Institute

UNITED STATES AGENCY INTERNATIONAL DEVELOPMENT USAID

USAID FROM THE AMERICAN PEOPLE

ACKNOWLEDGEMENTS

The village surveys conducted in Babati District, Tanzania in 2009 were a success due to the efforts and contributions of local government officials, organizations, and individuals, not the least of whom are the community members themselves. We would like to specifically acknowledge the participation and partnership of Savannas Forever Tanzania, National Institute of Medical Research (NIMR), and Tanzania Wildlife Research Institute (TAWIRI) in the implementation of the village-level quantitative and qualitative surveys in Tanzania, in particular: Majory Kaziya, Fenela Msangi, Edward Sandet, Felix Adolf, David Mollel, Glory Aseri, Jovit Felix, Esupat Kimirei, Rose Muro, Pendo Samson, Steven Temu and Gerald Mollel.

Savannas Forever Tanzania designed the surveys with technical assistance from Monique Borgerhoff Mulder from the University of California-Davis; Kari Hartwig and Deborah Levison, both from the University of Minnesota; and Esther Ngadaya from NIMR.

The survey would not have been possible without the hard work and commitment of the survey team, including supervisors, interviewers, and data analyzers, in Tanzania and Minnesota, USA. Thank you to the staff from Savannas Forever Tanzania, NIMR, and Selian Hospital for collecting the survey data; thank you to Jennifer Simmelink, Hilary Caldis, Chengxin Cao, and Jessica Hillyard at the University of Minnesota and Heidi Anderson at Cornell University for data analysis; and thank you to Kari Hartwig, Matt Sobek, and Joe Ritter both of the University of Minnesota, for providing supervision during the process.

We extend a special thank you to the district and village leaders who granted us permission to collect data in their catchment areas, and those who participated in the surveys, including elected officials, school headmasters, clinic staff and extension workers, and community members.

Our gratitude goes to the generous donors funding this research, including the University of Minnesota, U.S. Agency for International Development/The President's Emergency Plan for AIDS Relief, and Partners for Development.

Finally, we would like to identify and thank the authors of this report: Ms. Chengxin Cao, Ms. Paige Anderson Bowen; Dr. Kari Hartwig, from the University of Minnesota; Ms. Susan James from Savannas Forever Tanzania.

For further information on the Whole Village Project or this District Report, please contact:

Kari Hartwig, DrPH
Program Director, Whole Village Project
Office of International Programs
University of Minnesota
50 Wiley Hall
225 19th Ave South
Minneapolis, MN 55455
khartwig@umn.edu
612-625-6268

Susan James, MBA
Executive Director of Operations
Savannas Forever Tanzania
Njiro
P.O. Box 873
Arusha, Tanzania
james240@umn.edu
+255 783 514380

NOTE: THE VILLAGES OF SANGAIWE AND VILIMA VITATU WERE SURVEYED IN MAY/APRIL 2011, ONE YEAR FOLLOWING THE SURVEYING OF THE OTHER VILLAGES IN BABATI DISTRICT. SURVEY RESULTS FROM SANGAIWE AND VILIMA VITATU WERE NOT AVIALBLE AT THE TIME THIS REPORT WAS WRITTEN. A BRIEF SUMMARY OF RESULTS FROM SANGAIWE AND VILIMA VITATU CAN BE FOUND IN APPENDIX C.

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 within a single district. Village-level surveys were conducted in Babati District in Mandi, Gidas, Boay, and Mwada from November to December, 2009.

METHODOLOGY

The Whole Village Project's survey tools and methodology has been reviewed and approved by multiple Tanzanian research authorities (COSTECH, NIMR and TAWIRI) and the University of Minnesota institutional review board for the ethical conduct of human subjects research. Further, permissions are sought by the respective regional, district and village leadership before beginning data collection.

Village selection is based on the funding agency priorities and permission of government leaders. After permissions are received the Savannas Forever Tanzania (SFTZ) staff arrange dates for data collection with district officials and village leaders. A Tanzanian survey team of 6-7 personnel work in each village for 5-6 days. The team begins with a sensitization session with leaders and community members to introduce the project and staff. Village leaders provide a roster list of heads of households and the research team uses a computer generated randomization program to select 65-70 households from this list. A standardized quantitative survey is conducted in each selected household.

Data collection tools include both quantitative and qualitative instruments. All interviews and focus groups are conducted in Kiswahili whenever possible. If respondents are not fluent in Kiswahili, a bi-lingual villager is identified by the leadership to translate from the local language to Kiswahili. The core household survey asks questions about livelihood, earnings, educational status of all household members, assets, health and natural resource use. From the household members, two brief individual level surveys are conducted: (1) an HIV/AIDS knowledge, attitude and practice (KAP) survey and (2) an anthropometric assessment of children under-five and nutrition questions. For the KAP survey, up to 4 adults (15 years or older) within the household are asked to complete the survey. All interviews are conducted in a private space where no one else may listen. All children in the household under five are weighed and measured and the primary caretaker is asked to answer the accompanying survey.

In order to obtain more contextual data about each village, a number of focus group and key informant interview tools are used. Focus groups are conducted with men and women, village

leaders, and a special group of agriculturalists and livestock holders. Village leaders invite villagers to participate and try to obtain diversity of representation by sub-village, age and gender. The research team also conducts an institutional assessment of village organizations with a mixed group of 10-15 villagers to identify the different NGOs, religious organizations, and government services working in the village and their respective strengths, weaknesses and contributions to the community. In addition, key informant interviews are conducted with school headmasters and clinic officers. A detailed list of survey instruments and focus group guides can be found in Appendix A.

KEY FINDINGS

The research captured a broad range of information about myriad aspects of four villages in Babati District. 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

Civic engagement, specifically as measured through participation in village assemblies, is relatively high with almost 55-75% of household survey respondents in this district participating in village assemblies in the last 12 months. Three of the four villages surveyed had three village assemblies, while Gidas had four. Further, there were 5-8 village committees in each of the villages; committees on water, land, hazards and AIDS were the most common.

Among the four villages surveyed, Mandi, Gidas, Boay, and Mwada, there was a high percent of households with latrines with the exception of Mandi. Access to latrines and appropriate waste disposal reduce opportunities for communicable disease transmission and water borne diseases. In Gidas, Boay, and Mwada, over 93% of respondents have a pit latrine, which is higher than most of other districts. In stark contrast, only 27% of households in Mandi have a latrine.

General AIDS knowledge is relatively good in Babati district with the exception of Mandi. The average AIDS knowledge scores ranged from 4.2 to 4.4 among males and 3.6 to 4.0 among females (on a scale of 6), which is higher than most of other districts. The high average AIDS knowledge scores in Babati district are largely due to the low percentage of respondents with no HIV prevention knowledge (0-2 points). Also, both the average scores of men and women are higher than most of other districts surveyed by the WVP.

A relatively high percentage (10-14%) of households earned more than 500,000 Tsh from farming, compared to an average of six percent in Longido and Monduli districts. This is consistent with the fact that the vast majority of households (around 90%) cultivate crops as their main occupation. Also, a higher proportion (69-97%) of households own land compared to other districts. The percentage of households that cultivate crops of any kind is 75-99%.

District Gaps

Although the primary school completion rate is slightly higher in Babati district than other districts, the quality of the education is in question. The low teacher to student ratio ranging from 1:42 to 1:86 and classroom to student ratio as low as 1:102 (Mandi) is problematic. Students suffer from a learning environment in which too many students are crowded into too few classrooms and taught by too few teachers. In addition, as high as 100% of students (Gidas) attend school without eating food or having tea only. Only Mwada provides any school meals, consisting of porridge for breakfast, and maize and beans for lunch.

Access to quality health services is also limited in the district. According to men, women, and village leaders in focus group discussions, health and health care rank among the top two problems facing their villages. Most of respondents in this district felt that the treatment at local dispensaries is not helpful; still 14%, 8% and 8% of respondents in Boay, Mandi, and Mwada use traditional medicinal plants often or very often. In addition, only Gidas and Mwada offer maternal and child health services.

Any level of acute malnourishment among children under five must be considered a gap. Nearly 1 in 13 children under five in Mwada are acutely malnourished. In Mandi, no child had had beef for the last 24 hours; only 11% of children had legumes; 1.6% had bananas. The main source of food is ugali, which itself cannot meet the nutrition needs of children under five. Milk is the main source of protein; on average 34-68% of children had milk during the last 24 hours.

Malaria is the most prevalent disease affecting households, especially children under five. Over 90% of households in Gidas, Boay, and Mwada and almost 80% in Mandi had children under five who have suffered from fever. Despite malaria being cited a major concern by all focus group participants, less than one-fourth of households in all villages except Mwada own an insecticide-treated mosquito net to prevent malaria. In Mwada, where about half of households own at least

one insecticide-treated mosquito net, the incidence of fever among children under five is still too high at 94%.

Farming, as the main source of income, is vulnerable to the problem of soil erosion. In three of the four villages surveyed, over 75% of households considered soil erosion to be a serious problem, which is harmful to the sustainability and reliability of farming. Further, in three of the four villages, fewer than 25% of households irrigate their plots.

Newcastle Disease is the number one cause of chicken mortality in Tanzania. Vaccination rates against Newcastle Disease are low in Babati District. As few as 16% (Boay) of households owning chickens vaccinate those chickens against Newcastle Disease. The highest vaccination rate (27% in Mwada) is still low given the severe consequences of infection with Newcastle Disease.

Opportunities

Although agriculture is the main occupation among 90% of households surveyed in Babati District, income from livestock sales and products is also significant. In Mandi, where 93.2% of households consider farming as their main occupation, for an average family 45% of the total income comes from livestock sales and products, which is more than farming. This disconnection between main occupation and main income source may be related to the nature of the farming—small-scale, subsistence agriculture. In order to increase household income, district leaders have an opportunity to design strategies for matching the primary occupation with primary income source either by expanding opportunities for sales of agricultural produce or scaling up of pastoralism.

Farmers in all four villages were visited by an agricultural extension worker in the past year. These agricultural extension workers typically trained 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. 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 Babati 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 Babati 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 – TABLE OF SELECTED INDICATORS BY VILLAGE

		Babati District					
		Mandi	**Gidas**	**Boay**	**Mwada**	**Sangaiwe**	**Vilima Vitatu**
THE HOUSEHOLD AND HOUSING							
	Number of households surveyed	59	66	76	71	60	60
	Average household size	6.2	6.1	5.5	4.6	4.8	5.7
	% households in polygamous marriage (more than 1 wife)	17%	14%	17%	11%	5%	7%
	% of households headed by women	10%	11%	25%	18%	26%	20%
	% of hhs headed by single women (never married, divorced, widowed)	5%	5%	13%	13%	13%	17%
	% of households with a corrugated roof	45%	55%	68%	48%	37%	48%
	% of households using a toilet	27%	94%	95%	93%	88%	80%
	Avg time (minutes) required to collect water	31.8	56.9	34.4	61.0	88.1	86.3
	% households use firewood as primary energy source for cooking	95%	97%	95%	92%	100%	88%
EDUCATION							
	% of all adults without education	20%	19%	14%	12%	13%	12%
	% of household heads completed primary school	46%	62%	54%	62%	47%	73%
	% of adult men completed primary school	62%	71%	67%	72%	59%	74%
	% of adult women completed primary school	62%	63%	70%	72%	63%	69%
	Average primary school teacher to student ratio	1 : 61	1 : 42	1 : 81	1 : 86	1:48	1:50/1:30
	Average primary school textbook to student ratio	1 : 20	1 : 10	1 : 3	1 : 3	1:3	1:6/1:14
	Average secondary school teacher to student ratio	1:45	1:42	N/A	1:36	N/A	N/A
	Average # of years teachers stay at primary school	6.0	N/A	5.0	3.0	3.0	7.0/3.0
	Average # of years teachers stay at secondary school	3.0	4.0	N/A	2.0	N/A	N/A
	Ratio of female to male gross enrollment rates (primary school)	1.2	1.0	0.8	1.0	0.8	1.3/1.2
	Ratio of female to male gross enrollment rates (secondary school)	1.2	1.0	N/A	1.2	N/A	N/A
HEALTH							
	% of households with at least one mosquito net	24%	45%	21%	86%	88%	90%
	% of households that use traditional medicine often or very often	8%	2%	14%	8%	N/A	N/A
	% of households with access to protected drinking water	76%	65%	65%	86%	47%	32%
	% of households that take measures to make the water safe	49%	77%	76%	61%	70%	55%
	# of hospital/dispensary/clinic in the village	1	1	0	1	1	1
CHILDREN UNDER 5							
	% of infants exclusively breast fed through 6 months of age	10%	6%	10%	14%	26%	8%
	Average age in months at introduction of complementary feeding	16.6	14.6	13.5	12.5	21.4	19.8
	% of children who are treated in hospital/dispensary when ill	95%	97%	97%	100%	N/A	N/A

		Babati District					
		Mandi	**Gidas**	**Boay**	**Mwada**	**Sangaiwe**	**Vilima Vitatu**
	% of children whose birth mother is still alive and inside the hh	95%	87%	84%	90%	N/A	N/A
	% of children moderately to severely underweight	5%	6%	3%	8%	2%	0%
	% of children who are vaccinated for BCG	97%	100%	100%	98%	93%	96%
	% of children who are vaccinated for polio	95%	100%	97%	98%	93%	96%
	% of children who are vaccinated for DPT	95%	98%	100%	98%	91%	94%
	% of children who are vaccinated for measles	70%	89%	85%	84%	74%	68%
	% of children received Vitamin A supplement	75%	90%	87%	84%	72%	70%
	% children with fever	78%	92%	90%	94%	44%	49%
AIDS KNOWLEDGE							
	% of men with high AIDS knowledge score (5-6 points)	16%	32%	34%	43%	56%	69%
	% of women with high AIDS knowledge score (5-6 points)	17%	24%	23%	34%	59%	66%
	% of women who know that a person can protect themselves from HIV	67%	75%	78%	77%	80%	89%
	% of men who know that a person can protect themselves from HIV	89%	86%	89%	86%	89%	96%
	% of men who have talked with their wife/primary partner about ways to prevent AIDS	70%	80%	75%	84%	51%	63%
	% of women who have talked with their husband/primary partner about ways to prevent HIV/ AIDS	57%	58%	70%	66%	42%	42%
FOOD SECURITY AND NUTRITION							
	% of households worried about food in the past 4 weeks	51%	43%	61%	74%	68%	48%
	% of households ate limited variety of food in the past 4 weeks	85%	90%	67%	85%	70%	82%
	% of hhs went one day and night with no food in the past 4 weeks	3%	2%	4%	12%	7%	7%
	% of households that are currently growing kitchen garden	19%	2%	24%	6%	N/A	N/A
	Avg # of days/times hhs ate meat protein in past week	1.6	2.6	2.2	1.9	2.0	3.7
	Avg # of days/times hhs ate legumes in past week	1.3	1.9	1.3	1.8	1.5	1.4
	Avg # of days/times in last week hh ate foods with Vitamin A	7.1	8.0	8.0	7.0	1.0	3.0
	# of different types of food eaten in last week OR NUTRITION DIET DIVERSITY SCORE	4.6	4.8	5.8	4.7	5.5	6.5
	Food Security Index	3.2	3.5	3.5	4.3	3.4	3.2
ECONOMIC ACTIVITY, AGRICULTURE AND INCOME							
	% households own any agricultural land	97%	97%	95%	69%	92%	80%
	Average acres cultivated per household	3.6	4.6	2.6	4.9	3.9	5.1
	Average # of cattle owned per household	3.2	4.5	3.3	1.5	12.7*	17.4*
	Average # of goats/sheep owned per household	7.3	7.7	3.4	6.8	26.6*	25.2*
	Average # of chickens owned per household	5.2	6.4	5.2	4.4	5.2*	5.3*

		Babati District					
		Mandi	**Gidas**	**Boay**	**Mwada**	**Sangaiwe**	**Vilima Vitatu**
	% of hhs whose chicken are vaccinated for newcastle disease	15%	21%	15%	25%	8%	7%
	% of cattle lost to disease in the past 12 months	15%	10%	9%	17%	11%	7%
	% of cattle lost to drought in the past 12 months	1%	3%	1%	11%	3%	5%
	% of cattle lost to wildlife in the past 12 months	0%	0%	0%	1%	0%	1%
	% of chickens lost to disease in the past 12 months	13%	14%	17%	17%	49%	42%
	% of chickens lost to drought in the past 12 months	1%	0%	1%	4%	0%	0%
	% of chickens lost to wildlife in the past 12 months	1%	1%	2%	4%	16%	16%
	% of goats/sheep lost to disease in the past 12 months	33%	35%	35%	51%	5%	8%
	% of goats/sheep lost to drought in the past 12 months	0%	0%	1%	0%	4%	7%
	% of goats/sheep lost to wildlife in the past 12 months	17%	29%	27%	13%	1%	2%
	% of household heads with the main occupation of farming	93%	91%	93%	87%	90%	77%
	% of hh heads with the main occupation of livestock keeping	2%	2%	0%	4%	2%	7%
	% HHs that report loss of crops due to wildlife destruction	24%	63%	43%	74%	N/A	N/A
	% of HHs that irrigate the plots in village (from focus group data)	25%	0%	60%	10%	N/A	10%
	% households with bicycle	38%	55%	43%	69%	70%	70%
	% households with radio	40%	56%	59%	56%	50%	78%
	% households with cell phone	29%	47%	42%	34%	55%	72%
CIVIC ENGAGEMENT AND INSTITUTIONS							
	% of hhs that participated in village assembly in past 12 mo	69%	59%	56%	75%	8%	15%
	% of hhs in village gov't or committee in past 12 mo	14%	5%	7%	10%	N/A	N/A
	% of hhs that asked village leaders for assistance in past 12 mo	31%	9%	15%	21%	63%	78%
	Distance to major weekly market	Not known	23 km	10 km	12 km	None	13km
	# of village committees/groups	5	5	6	7	1	1
	# of NGOs	7	5	5	14	8	8
	# of credit, banking services or VICOBA	1	2	1	1	1	0
DEMOGRAPHICS							
	Religion (% Christian; % Muslim; % Traditional)	99%; 2%; 0	74%; 18%;6%	47%; 49%;4%	73%; 25%;1%	72%;13%;2%	62%;28%;0%
	Dependency Ratio (# of child (0-14 years) and aged (65+) population per 100 intermediate age (15-64 years)	1.15	1.31	1.11	1.06	1.05	0.94
	Sex Ratio (# of males per 100 females)	96	108	96	121	97	99

***AVERAGE NUMBER OF LIVESTOCK OWNED <u>AMONG</u> HOUSEHOLDS WHO OWN LIVESTOCK**

APPENDIX C – SANGAIWE AND VILIMA VITATU

Sangaiwe and Vilima Vitatu are primarily farming villages where the majority of the population is Christian and of diverse ethnicity. Vilima Vitatu has a significant Muslim population (28%). As compared with the other four villages in Babati District, Sangaiwe and Vilima Vitatu have equally low rates of adult levels of education, high rates of bicycle and mosquito net ownership, low participation in village assemblies, high rates of households that had request help from village leaders, slightly higher AIDS knowledge and prevention scores, though lower percentages of people who had talked to their partner about ways to prevent HIV/AIDS.

Vilima Vitatu has the highest number of household heads having completed primary school (73%). Compared with the other villages in Babati District, Sangaiwe and Vilima Vitatu have the lowest rates of polygamy while also having the highest percentages of female-headed households (with the exception of Boay (25%), which has a higher rate than Vilima Vitatu (20%)).

Food security and nutrition in Sangaiwe and Vilima Vitatu were consistent with findings in the other four villages as were cattle and goat losses due to drought and disease. However, percentages of chickens lost to disease were significantly higher in Sangaiwe and Vilima Vitatu with approximately 50% of chickens lost.

Access to clean drinking water is a major issue in Sangaiwe and Vilima Vitatu where less than 50% of households report access to protected drinking water. In Sangaiwe, 70% of households take measures to make the water safe while only 55% of households in Vilima Vitatu report taking similar measures. In both villages, one hour and twenty minutes is spent collecting water.