

UNIVERSITY OF MINNESOTA



The Whole Village Project

Summary of Kabasa, Nyatwali, and Serengeti in Bunda District

February 2011

UC DAVIS
UNIVERSITY OF CALIFORNIA



USAID
FROM THE AMERICAN PEOPLE

ACKNOWLEDGEMENTS

The village surveys conducted in Bunda District, Tanzania in October 2010 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 under the supervision of Ms. Susan James.

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, 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 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 and editors of this report: Ms. Catherine Simons and Dr. Kari Hartwig, from the University of Minnesota.

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
+255783514380

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 three villages: Kabasa, Nyatwali, and Serengeti villages, Bunda District during the month of October 2010.

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 60-75 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) a 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 from three villages in Bunda District: Kabasa, Nyatwali, and Serengeti. 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 three villages. In particular, there is nearly total mosquito net ownership, high rates of child vaccinations for BCG, DPT and polio, widespread latrine usage, and a moderately high HIV knowledge score.

In Serengeti, 90% of households own at least one net and 95% in Nyatwali. Despite this strength, only 63% of nets in Kabasa and Serengeti had recently had their nets dipped in insecticide treatment. In Serengeti, however, 78% of households had their mosquito nets dipped. Given the high rates of malaria in the area increasing bed net coverage to 100% and regular dipping of nets should be encouraged.

Infant and young child vaccination rates for BCG, DPT and polio were over 95% in both villages. However, vaccination rates for measles drop to an average of 70%; given the virulence of this disease, clinic officers and health committee members should identify strategies to meet the gaps in measles vaccination. Although approximately 63% 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 three 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 85% of respondents in Kabasa, Nyatwali, and Serengeti have a pit latrine, which is on average with most other districts.

General AIDS knowledge is relatively high among the three villages surveyed in Bunda District. The average AIDS knowledge scores ranged from 5.2 to 5.4 among males and 5.1 to 5.3 among females

(on a scale of 6). The scores for both males and females are higher than most districts. The high AIDS knowledge scores in Bunda 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. In Nyatwali, all respondents had some HIV prevention knowledge. Again, although there is an overall strength here, all three communities should strive to increase HIV knowledge in order to better protect themselves and their families.

District Gaps

The level of one's education is often a predictor of other quality of life factors such as economic productivity, food security, and overall health. In both villages, the quality of schools is a concern and the significantly lower percent of girls attending secondary school. Girls' education often is a predictor of family health in the future; further Tanzania has set increasing girls' participation rate in secondary school as a Millennium Development Goal. Other quality factors include a low teacher to student ratio, poor student exam results, and the limited food available at school. Only the primary schools in Kabasa provide school meals, consisting of tea and porridge. 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 two of the three villages: Kabasa and Serengeti. Most respondents in this district felt the treatment at local dispensaries was not helpful. According to men's and women's focus group discussions, malaria is the number one problem followed by typhoid, reproductive and sexual health. For children, the main issues in addition to malaria are diarrhea, typhoid, bilharzia, and kwashiorkor (a disease of malnutrition). In addition, maternal and child health services are offered only in Serengeti.

Any level of acute malnourishment among children under-five must be considered a gap. Nearly 6% of children under-five in Kabasa and Serengeti and 16% in Nyatwali are underweight for their age. Kabasa, Nyatwali, and Serengeti report stunting in approximately 33% of children under-five. In all three 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 either organic or inorganic fertilizers, there extensive intercropping and terracing practiced to control erosion. Both Kabasa and Nyatwali indicated that they had 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 Bunda District. The highest rate of the three villages, only 10% of households owning chickens in Kabasa vaccinate those chickens against Newcastle Disease. The highest vaccination rate is staggeringly low given the severe consequences of infection with Newcastle Disease. Household surveys revealed that 30% to 43% of chickens had been lost to disease in the past year in these villages.

Opportunities

None of the three villages report having a secondary school. Education committees 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 any or all of these three villages could produce improvements in the education available in Bunda 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 Kabasa and Nyatwali reported that did not receive a visit by an agricultural extension worker in the past year. Serengeti received a visit from an agricultural extension worker associated with a NGO. 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 Serengeti. 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 Bunda 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 Bunda 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.

| | | Kabasa | Nyatwali | Serengeti |
|----------------------------------|---|---------------------------|----------|-----------|
| THE HOUSEHOLD AND HOUSING | | | | |
| | Number of households surveyed | 60 | 60 | 60 |
| | Average household size | 7.6 | 5.2 | 6.4 |
| | % households in polygamous marriage (more than 1 wife) | 26.8% | 16.7% | 21.7% |
| | % of households headed by women | 29.8% | 30% | 26.7% |
| | % of households with corrugated roof | 61.7% | 65% | 60% |
| | % of households using a toilet | 91.7% | 91.7% | 88.3% |
| | Avg time (minutes) required to collect water | 61.8 | 27.9 | 59.5 |
| | % households use firewood as primary energy source for cooking | 95% | 33.3% | 5% |
| EDUCATION | | | | |
| | % of all adults without education | 15.4% | 10.8% | 19.9% |
| | % of household heads completed primary school | 49.1% | 68.3% | 56.7% |
| | % of adult men completed primary school | 68.9% | 79.5% | 61.5% |
| | % of adult women completed primary school | 58.3% | 66.3% | 51.6% |
| | Average primary school teacher to student ratio | 1:38, 1:49, 1:41 | 1:47 | 1:36 |
| | Average primary school textbook to student ratio | 1:4, 1:7, 1:5 | 1:3 | 1:20 |
| | Average secondary school teacher to student ratio | -- | -- | -- |
| | Average # of years teachers stay at primary school | 10 yrs; 8 yrs; 8 yrs | 2 years | 2 years |
| | Average # of years teachers stay at secondary school | -- | -- | -- |
| | Ratio of female to male gross enrollment rates (primary school) | 160:180; 201:238; 144:181 | 275:287 | 80:62 |

| | | | | |
|-------------------------|---|-------|-------|-------|
| | Ratio of female to male gross enrollment rates (secondary school) | -- | -- | -- |
| HEALTH | | | | |
| | % of households with at least one mosquito net | 93.3% | 95% | 90% |
| | % of households with access to protected drinking water | 53.3% | 33.3% | 13.3% |
| | % of households that take measures to make the water safe | 68.3% | 88.3% | 78.3% |
| | # of hospital/dispensary/clinic in the village | 1 | 0 | 1 |
| CHILDREN UNDER 5 | | | | |
| | % of infants exclusively breast fed through 6 months of age | 43.1% | 30.4% | 47.8% |
| | Average age in months at introduction of complementary feeding | 5.5 | 5.6 | 5.1 |
| | % of children whose birth mother is still alive and inside the hh | 90.7% | 88.2% | 87.2% |
| | % of children moderately to severely underweight | 0% | 15% | 3.7% |
| | % of children who are vaccinated for BCG | 97.3% | 92.2% | 91% |
| | % of children who are vaccinated for polio | 97.3% | 94.1% | 94.9% |
| | % of children who are vaccinated for DPT | 96% | 92.2% | 88.5% |
| | % of children who are vaccinated for measles | 80% | 62.8% | 68% |
| | % of children received Vitamin A supplement | 69.3% | 54.9% | 65.4% |
| | % children with fever | 53.3% | 41.2% | 53.9% |
| AIDS KNOWLEDGE | | | | |
| | % of men with high AIDS knowledge score (5-6 points) | 58% | 76% | 58% |
| | % of women with high AIDS knowledge score (5-6 points) | 60% | 58% | 58% |
| | % of women who know that a person can protect themselves from HIV | 94% | 93% | 95% |

| | | | | |
|--|---|-------|-------|-------|
| | % of men who know that a person can protect themselves from HIV | 100% | 100% | 98% |
| FOOD SECURITY AND NUTRITION | | | | |
| | % of households worried about food in the past 4 weeks | 58.3% | 51.7% | 70% |
| | % of households ate limited variety of food in the past 4 weeks | 96.7% | 80% | 85% |
| | % of hhs went one day and night with no food in the past 4 weeks | 10% | 10% | 15% |
| | % of households that are currently growing kitchen garden | 10% | 11.7% | 40% |
| | Avg # of days/times hhs ate meat protein in past week | 5.5 | 6.9 | 5.5 |
| | Avg # of days/times hhs ate legumes in past week | 0.9 | 1.2 | 0.5 |
| | Avg # of days/times in last week hh ate foods with Vitamin A | 2.2 | 2.2 | 2 |
| | # of different types of food eaten in last week OR NUTRITION DIET DIVERSITY SCORE | 6.1 | 6.7 | 5.9 |
| | Food Security Index | 2.5 | 4.8 | 3.7 |
| ECONOMIC ACTIVITY, AGRICULTURE AND INCOME | | | | |
| | % households own any agricultural land | 96.7% | 58.3% | 66.7% |
| | Average acres cultivated per household | 4.1 | 2.0 | 3.4 |
| | Average # of cattle owned per household | 10.7 | 14 | 10.7 |
| | Average # of goats/sheep owned per household | 7.0 | 7.7 | 13.3 |
| | Average # of chickens owned per household | 7.8 | 9.3 | 11.2 |
| | % of hhs whose chicken are vaccinated for Newcastle disease | 10% | 48.3% | 3.3% |
| | % of cattle lost to disease in the past 12 months | 5% | 9% | 9.5% |
| | % of cattle lost to drought in the past 12 months | 0% | 3% | 0% |
| | % of cattle lost to wildlife in the past 12 months | 0% | 0% | 0% |

| | | | | |
|--|---|-------|-------|-------|
| | % of chickens lost to disease in the past 12 months | 45% | 41.5% | 30.1% |
| | % of chickens lost to drought in the past 12 months | 0% | 0% | 0% |
| | % of chickens lost to wildlife in the past 12 months | 23% | 14.6% | 22.9% |
| | % of goats/sheep lost to disease in the past 12 months | 17% | 18.1% | 10.1% |
| | % of goats/sheep lost to drought in the past 12 months | 0% | 1.1% | 0.6% |
| | % of goats/sheep lost to wildlife in the past 12 months | 1% | 7.1% | 1.3% |
| | % of household heads with the main occupation of farming | 86% | 58.3% | 86.4% |
| | % of hh heads with the main occupation of livestock keeping | 0% | 0% | 0% |
| | % of HHs that irrigate the plots in village (from focus group data) | 5% | 75% | 75% |
| | % households with bicycle | 61.7% | 53.3% | 71.7% |
| | % households with radio | 60% | 66.7% | 66.7% |
| | % households with cell phone | 45% | 58.3% | 58.3% |
| KEY INSTITUTIONS AND CIVIC ENGAGEMENT | | | | |
| | Distance to major weekly market | 10 km | 18km | 20km |
| | # of village committees/groups | 4 | 4 | 4 |
| | # of NGOs | 0 | 2 | 3 |
| | # of credit, banking services or VICOBA | 1 | 4 | 2 |
| | % of hhs that participated in village assembly in past 12 mo | 13% | 20% | 18% |
| | % of hhs in village gov't or committee in past 12 mo | 17% | 17% | 12% |
| | % of hhs that asked village leaders for assistance in past 12 mo | 80% | 87% | 83% |
| DEMOGRAPHICS | | | | |

| | | | | |
|--|---|---------------|----------------|-------------|
| | Religion (% Christian; % Muslim; % Traditional) | 75%; 1.7%; 0% | 61.7%; 10%; 0% | 65%; 5%; 0% |
| | Dependency Ratio (# of child (0-14 years) and aged (65+) population per 100 intermediate age (15-64 years)) | 127.9 | 89 | 108.2 |
| | Child-Woman Ratio (# of children aged 0-4 years per 1,000 women in the age group 15-44 years) | 0.5 | 0.4 | 0.5 |
| | Sex Ratio (# of males per 100 females) | 1.0 | 1.0 | 0.9 |