

# Cost and Productivity Analysis of Straight Talk Foundation Programs

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## Abbreviations

|      |                                     |
|------|-------------------------------------|
| AIDS | Acquired Immune Deficiency Syndrome |
| ATC  | Average total cost                  |
| FHI  | Family Health International         |
| HIV  | Human Immunodeficiency Virus        |
| M&E  | Monitoring and evaluation           |
| STF  | Straight Talk Foundation            |
| TC   | Total costs                         |
| TFC  | Total fixed costs                   |
| TVC  | Total variable costs                |

## **Executive Summary**

### **Background**

The Straight Talk Foundation (STF) is perhaps one of the most successful media outlets reaching youth in Africa with sexual and reproductive health information. However, in the absence of cost and effectiveness measures, the strategies for managing growth or adjusting programs in response to changes in funding flows cannot be systematically evaluated.

### **Objective**

To build the capacity of STF program staff to assess the cost and cost-effectiveness of STF ongoing activities and understand how this information can be used for strategic planning.

### **Methods**

Following a half-day workshop in June 2006, the financial and monitoring and evaluation (M&E) staff of STF worked together to organize expenditure and outcome data. Customized Excel worksheets were developed to organize the information for analysis. Analyses included the cost of resources used for different STF outputs or programs, a productivity estimate of the outputs or programs, and a series of demonstration analyses of how this type of information can be used to guide programmatic decisions.

### **Results**

In 2005, STF used resources worth USD1,260,878<sup>1</sup> across their four program activities (print, radio, school environment, and community mobilization). Over 40 percent of the resources were used to support the print publications. Another 38 percent was used to support the radio programming. The remaining 20 percent of resources were used for school environment programs (11 percent) or the community mobilization activities (9 percent). In terms of resource productivity, overall the radio programs had the lowest estimated annual cost per person reached of \$0.10. This is followed by print media, with an estimated annual cost per person reached of \$0.22. The school program required approximately \$2.74 per student per year, while the Gulu Youth Center required \$0.82 in resources per visit. Producing an additional issue of a print publication is estimated to require ~\$3,900 worth of resources, while producing another radio program is estimated to require ~\$227 worth of resources. This incremental cost information is an important input to any subsequent cost-effectiveness analyses of expanding print or radio programs. An illustration of how this information would be used appears after the results section.

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<sup>1</sup> Average exchange rate for 2005: 1 USD = 1,777.28 Ugandan Shillings.

Source: <http://www.oanda.com/convert/fxhistory> accessed on October 2, 2006. All currency amounts in this report are in US Dollars using this exchange rate.

## **Conclusion**

With minimal outside technical assistance, the finance and M&E staff at STF was able to apply the basic concepts related to cost and cost-effectiveness analysis. The program now has gained valuable hands-on experience working with their financial and M&E data and is better positioned to make strategic decisions about how the organization should evolve, taking both costs and outcomes into account. For example, rather than creating new radio programs or print articles, one option would be to repackage or recycle the information. This has the potential to reduce the costs per show or costs per issue as the field work costs can be spread over more shows/issues than if every show/issue is based upon original data collection. Documenting the cost and cost-effectiveness of their programs should assist STF in securing future donor support for their activities. Better outcome measures will be needed for the school environment and community mobilization programs before a more detailed evaluation can be conducted for these programs.

## **Background**

The Straight Talk Foundation (STF) is perhaps one of the most successful media outlets reaching youth in Africa with sexual and reproductive health information. However, in the absence of cost and effectiveness measures, the strategies for managing growth or adjusting programs in response to changes in funding flows cannot be systematically addressed.

Towards that end the Horizons Program of Population Council sought to build the capacity of the STF staff so that they could assess the impact of their activities as well as examine the cost of their programs. Family Health International (FHI), a Horizons partner, was asked to work with the finance and M&E staff of STF to build their skills in using programmatic data for decision making around issues of cost and cost-effectiveness analyses. These analyses were done in conjunction with an evaluation of STF mass media communication programs. Other components included a household survey of parents and an evaluation of the STF School Environment Program.<sup>2</sup>

As programs evolve, they are faced with many decisions regarding how to grow their services, or in the face of budget shortfalls, where to make cuts that will save resources with minimal damage to program outputs. In the absence of an understanding of how resources are being used within the organization and the relative cost of those resources, the program's ability to make fully-informed decisions is severely limited. On the other hand, once a program understands its costs and the factors that influence those costs, they are in a position to make decisions that will maintain or improve the financial performance of the organization and thereby improve its long-term survival.

The specific objective of this project was to build the capacity of STF program staff to assess the cost and cost-effectiveness of STF ongoing activities and understand how this information can be used for strategic planning. Specific research questions included:

1. What are the total resources used by the Straight Talk Foundation for their programs in 2005?
2. What proportion of total resources is used by the various programs?
3. How productive are the resources being used by the programs?
4. What is the estimated cost associated with expanding the print or radio activities?
5. What is the relative cost-effectiveness of the print vs. the radio activities?

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<sup>2</sup> These reports are available from <http://www.straight-talk.or.ug/downloads/downloads.html>.

## Methods

### Design

Following a half-day orientation workshop in June 2006, STF finance and monitoring and evaluation (M&E) staff undertook a retrospective review of financial and monitoring and evaluation records for fiscal year 2005.

### Data Collection

Three data sources were used: M&E records, expenditure records maintained by STF, and interviews with key program staff. Since the first two are existing data sources, what will be described here is the process of data collection from the STF staff and how the information obtained was used in analysis. This was an iterative process combining phone calls, e-mail exchanges, and face-to-face interviews and a customized data collection form provided to the M&E officer.

### Resource Identification

Building upon the exercises at the half-day workshop, the program staff from print, radio, school environment, and the community mobilization activities completed a list of resources used by their program. Resources were identified in three broad categories: personnel, supplies (items used up within one year) and equipment (items with an expected useful life of greater than one year). A physical inventory of furnishings and equipment at STF headquarters and the Gulu Youth Center was also conducted to make sure no items were omitted from the resource identification for supplies and equipment.

### Resource Valuation

The finance office was then asked to assign an annual value to each of the resources identified. For personnel, the annual compensation to each staff member was used as the value of labor. For supplies, the expected quantity to be used in one year was estimated and the cost of obtaining those resources if they were to be purchased was estimated. For equipment, the replacement cost if these items were to be purchased was obtained and the expected useful life for each item was also identified. These data were then used to compute an annualized value of equipment used by STF.<sup>3</sup> In addition, the square footage of STF headquarters was measured. The rental equivalent per square foot was then used to assign a value to this resource. The rental equivalent for the Gulu Youth Center was also estimated by the finance staff.

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<sup>3</sup> The annualization process uses a safe local investment return as a proxy for the opportunity cost of money. In this way, the annualized cost of equipment will exceed the straight-line depreciation amount since investment opportunities foregone are considered in the annualization calculation but not in straight-line depreciation estimates. In this situation a rate from 10.0 percent to 11.5 percent was used depending upon the expected useful life of the equipment. These rates correspond to recent Treasury bill sales by the Central Bank of Uganda.

## **Resource Allocation**

The data collected through the interviews with program staff were then organized in a series of Excel worksheets. A separate worksheet was prepared for each of the three resource types: personnel, supplies, and equipment. Each row corresponded to a specific resource (person, supply item, or piece of equipment). An accompanying worksheet was prepared to guide the allocation of each resource item into the four service lines (print, radio, school environment, or community mobilization) or to overhead. This last category was used when there was some doubt as to how best to divide the resource use across the four service lines. Its use was discouraged but it was necessary to include so that the allocation of use would total 100 percent for each resource. The resource allocation worksheets were then circulated among program staff so that they could estimate the percent of the resource to allocate to the five categories. Staff at STF headquarters was asked to estimate their time allocations directly. For field staff, the program leaders were asked to estimate the percent effort of each staff member identified as contributing to their program.

## **Cost Analysis**

The first part of the cost analysis was designed to obtain an estimate of the total value of resources used to support the four service lines of STF. This includes direct expenditures as well as the annualized value of all equipment used and the value of in-kind contributions received by STF which are used to produce their outputs. It excludes resources that are not used to support the four service lines. Therefore this estimate will not match the expenditures in the STF annual report.

Once the data was felt to be of sufficient quality, the data was summarized by service lines by multiplying the annual resource value times the percent allocation to the service line or overhead and summing across all resources. Separate sub-totals for personnel, supplies, and equipment were computed. Once the costs were allocated to the four service lines and overhead, the overhead resource costs were loaded proportionately to the service line item costs so fully loaded costs could be computed for each of the four service lines.

The resources used to produce the outputs were then classified as fixed or variable with respect to the number of print issues or radio shows produced or fixed vs. variable with respect to the number of copies printed or the amount of airtime a radio show is broadcast. This distinction is made so that the financial implications of small adjustments in the quantity of output produced can be assessed. For example, producing a new issue of a publication will require more time by the production and distribution staff and production related supplies, but is not likely to affect the amount of equipment or other infrastructure required. On the other hand, if instead of printing 50,000 copies, 100,000 copies of a publication are produced, the variable costs are the value of the additional supplies required for printing and distribution since no additional program staff is required when more copies are printed at the printers.

## **Productivity Assessment**

The last part of the analysis was a productivity assessment of the different programs. Productivity is a measure of the resources used per unit of output. This is most commonly expressed as the cost per unit output (or average total cost). In this section, productivity is estimated using two different measures of output. The first is the physical output for each program:

- # of issues produced for the print program,
- # of shows produced for the radio program,

- # of schools reached for the school environment program,
- # of youth center visits for the youth center component of the community mobilization program, and
- # of health fairs conducted for the outreach component of the community mobilization program.

Because these outputs are quite different depending upon the program, a second measure of output: the number of persons reached through the program is used. The number of persons reached was estimated by the STF using information on the size of the target population for a publication/program, and the probability of a person reporting having seen / heard the publication or program. The data on the probabilities comes from a separate impact study conducted by STF. Details on the estimation of persons reached can be found in the appendix.

This measure has two advantages, 1) it is comparable across programs, and 2) it is linked to the ultimate goal of a communication program (to reach people with information that informs their behavior choices). This is still a crude measure of output in that it does not consider the quality of the understanding of the information received, nor the intensity of exposure, but it does at least reflect whether or not information was received which is an important precursor to behavior change. Because a person who is exposed once is counted the same as a person who is exposed multiple times, this measure is biased against the more frequently distributed radio programming compared to less frequently distributed print media.

This measure is *not* the same as an effectiveness measure since we do not know if the information had any impact in terms of reducing risky behaviors or changing attitudes. There are other activities on-going within STF which may help establish measures of effectiveness for some of the STF outputs.

## **Marginal Cost Analysis**

While average total cost indicates how productively resources are being used, it does not provide an accurate estimate of the cost of expanding output. This is because the quantity of some of the resources (fixed resources) used will not change in response to small changes in the level of output. Therefore when expanding output the focus is on the change in variable resources and the associated cost of those additional resources required. This part of the analysis will estimate the cost of producing two more issues of a semi-annual publication and the cost of producing two more radio programs.

## **Illustration of Further Analysis**

The last section of this report will illustrate how the above information can be used to support further analysis. An example of a cost-effectiveness analysis of expanding either print or radio activities is provided. In the absence of an accurate effectiveness measure, the illustration will discuss how to set up the analysis but no result can be provided.

## Results

### Cost Analysis

Our study found that, the STF is estimated to have used resources valued at \$1,260,878 to support their four service lines in 2005. The largest share of resources (42 percent) was used to support their print activities. This was followed by 38 percent or \$474,345 for the radio programming. The remainder was almost equally divided between school environment (\$134,735) and community mobilization (\$120,084). The overall composition of resources was 53 percent (\$663,754) for supplies, 35 percent for personnel and 12 percent for equipment/infrastructure (\$445,031 and \$152,093 respectively). Table 1 below provides the breakdown by service and type of resource.

**Table 1 Use of resources for STF programs, 2005**

| Type of resource             | Print             | Radio             | School environment | Community mobilization | Total               | %            |
|------------------------------|-------------------|-------------------|--------------------|------------------------|---------------------|--------------|
| Personnel                    | \$ 146,910        | \$ 150,950        | \$ 79,990          | \$ 64,482              | \$ 445,031          | 35.3         |
| Supplies                     | \$ 345,151        | \$ 256,885        | \$ 35,164          | \$ 28,553              | \$ 663,754          | 52.6         |
| Equipment/<br>infrastructure | \$ 38,952         | \$ 66,510         | \$ 19,581          | \$ 27,049              | \$ 152,093          | 12.1         |
| <b>Total</b>                 | <b>\$ 531,713</b> | <b>\$ 474,345</b> | <b>\$ 134,735</b>  | <b>\$ 120,084</b>      | <b>\$ 1,260,878</b> | <b>100.0</b> |
| <b>%</b>                     | <b>42.2</b>       | <b>37.6</b>       | <b>10.7</b>        | <b>9.5</b>             | <b>100.0</b>        |              |

It is worth noting that compared to school and community-based activities which are very labor intensive, print and radio are supply intensive.

### Productivity Assessment

Table 2 below provides the total costs allocated to the different service lines, the volume of services produced, and the average cost per unit of service. The community mobilization service line is broken into two pieces here, the operation of the Gulu Youth Center and the staging of health fairs. The costs were mapped separately for these activities and the outputs produced are quite different (visits for the Gulu Youth Center, and fairs staged for the health fair activities). Specific productivity estimates for different outputs within the program areas can be found in the appendix.

**Table 2 Productivity of resource use (Cost per unit output) for STF programs, 2005**

| Cost                     | Community mobilization |                 |                          |                             |                          |
|--------------------------|------------------------|-----------------|--------------------------|-----------------------------|--------------------------|
|                          | Print                  | Radio           | School environment       | Gulu youth center           | Health fairs             |
| Total cost               | \$ 531,713             | \$ 474,345      | \$ 134,735               | \$ 38,459                   | \$ 81,626                |
| Volume of output (units) | 47 issues              | 519 shows       | 1,967 schools reached    | 12,772 visits               | 9 health fairs           |
| Average total cost       | \$ 11,313 per issue    | \$ 914 per show | \$ 68 per school reached | \$ 3 per youth center visit | \$ 9,070 per health fair |

The output measures in Table 2 are the physical outputs of the programs. This information may be useful when deciding whether or not to accept a contract to produce a special issue of a print publication or a radio program or to conduct a health fair. The ultimate goal is to reach persons with information so that they can maintain or change their behaviors. Therefore, in Table 3 the estimated # of persons reached through the various programs is used to re-assess the productivity of resource use. This is an intermediate output. This estimate is conservatively biased since it ignores the intensity of reach (a person reached once is counted the same as a person who is reached multiple times). In this way the productivity of the more frequent communication (radio) is undervalued compared to print which is distributed less frequently and therefore less likely to result in multiple exposures per person.

**Table 3 Productivity of resource use (cost per person reached) for STF programs, 2005**

| Cost                                  | Community mobilization |            |                    |                   |              |
|---------------------------------------|------------------------|------------|--------------------|-------------------|--------------|
|                                       | Print                  | Radio      | School environment | Gulu Youth Center | Health fairs |
| Total cost                            | \$ 531,713             | \$ 474,345 | \$ 134,735         | \$ 38,459         | \$ 81,626    |
| # of persons reached                  | 2,252,017              | 4,159,782  | 49,175             | 46,770            | 22,500*      |
| Average total cost per person reached | \$ 0.24                | \$ 0.11    | \$ 2.74            | \$ 0.82           | \$ 3.63      |

\*Assumes 2,500 persons reached per health fair

When the estimated number of persons reached is considered, the radio programs are the most productive users of resources, followed by print activities, the Gulu Youth Center, the school environment program and finally the health fairs. These results need to be used with caution as it is not clear that a person reached by print is equivalent to a person reached by radio. Further research would be needed to establish the appropriate equivalencies across programs. Specific productivity estimates for products within a program can be found in the appendix.

## Marginal Cost Analysis

While the data in Table 2 above provide information on the relative productivity of resource use for the different program activities, they do not provide an estimate of the cost of increasing output within the different product lines. This requires a focus on the incremental or variable resources required to support output expansion or a marginal cost analysis.

## Changing the frequency of publication

This example is based upon the *Parent Talk* publication in English. In 2005, this was published two times with a print run of 100,000 copies per issue. The first step is to identify what additional resources will be required to support publication of *Parent Talk* (English) four times a year. It is unlikely that additional equipment/infrastructure will need to be acquired to support the production of more issues. In addition, resources such as support staff, security services, utilities, etc. are not likely to be affected by this change in frequency of publication. But the resources of reporter and production staff time, print materials, office supplies, mailing materials, and postage will be affected. The reporter and production staff time and office supplies are likely linked to the number of issues produced as mock-ups and other activities take place prior to printing. The printing materials, mailing materials, and postage are more closely tied to the number of copies produced. Therefore the current costs for these variable resources will be multiplied by a factor equal to:

$$\text{New total output (issues or copies)} \div \text{Original total output (issues or copies)}$$

to obtain the new total value of variable resources for the print program. Table 4 below shows the results of these calculations.

**Table 4 Impact of changing frequency of publication for *Parent Talk* (English)**

| Resource                          | Base case:<br>2 issues of 100,000<br>copies per year | Expansion:<br>4 issues of 100,000<br>copies per year | Change in cost |
|-----------------------------------|------------------------------------------------------|------------------------------------------------------|----------------|
| <b>Labor</b>                      |                                                      |                                                      |                |
| Fixed                             | \$ 3,884                                             | \$ 3,884                                             | n/a            |
| Variable <sup>oo</sup>            | \$ 2,483                                             | \$ 4,965                                             | \$ 2,483       |
| <b>Supplies</b>                   |                                                      |                                                      |                |
| Variable by issue*                | \$ 208                                               | \$ 417                                               | \$ 208         |
| Variable by copy <sup>†</sup>     | \$ 5,095                                             | \$ 10,191                                            | \$5,095        |
| Fixed                             | \$ 2,696                                             | \$ 2,696                                             | n/a            |
| <b>Equipment / infrastructure</b> |                                                      |                                                      |                |
| Fixed                             | \$ 1,658                                             | \$ 1,658                                             | n/a            |
| <b>Total cost</b>                 | \$ 16,024                                            | \$ 23,810                                            | \$ 7,786       |
| <b>Cost per issue</b>             | \$ 8,012                                             | \$ 5,953                                             |                |

<sup>oo</sup>This includes reporter and production staff time estimated at 274 person hours per issue.

\*This includes transport and office supplies

†This includes printing materials, mailing materials, and postage

The incremental cost of increasing the frequency of publication is ~ \$ 3,900 per additional issue ( $\$7,786 \div 2$ ). Approximately half of the costs associated with the print program are fixed so the cost per issue falls as these fixed costs are spread out over more issues.

### Producing another radio program

A similar approach is used when trying to estimate the cost of producing an additional radio program. The equipment resources are likely to remain unchanged. For labor, the time of the production and broadcast staff will need to increase while the time of support staff, security, etc. will remain fixed. For supplies, producing a new show entails additional travel to the field site to gather interviews and then additional production activities back at headquarters. Finally additional airtime needs to be purchased so the material can be broadcast. The first two costs are sensitive to the number of programs aired while the latter cost is sensitive to the number of hours aired. Other supplies will remain unchanged.

**Table 5 Impact of changing number of radio programs produced (Ateso language)**

| Resource                           | Base case:<br>52 shows and<br>78 hours airtime<br>per year | Expansion:<br>54 shows and<br>80 hours airtime<br>per year | Change in cost |
|------------------------------------|------------------------------------------------------------|------------------------------------------------------------|----------------|
| <b>Labor</b>                       |                                                            |                                                            |                |
| Fixed                              | \$ 10,681                                                  | \$ 10,681                                                  | n/a            |
| Variable <sup>°</sup>              | \$ 4,444                                                   | \$ 4,614                                                   | \$ 170         |
| <b>Supplies</b>                    |                                                            |                                                            |                |
| Variable by show *                 | \$ 725                                                     | \$ 753                                                     | \$ 28          |
| Variable by broadcast <sup>†</sup> | \$ 9,936                                                   | \$ 10,191                                                  | \$ 255         |
| Fixed                              | \$ 9,748                                                   | \$ 9,748                                                   | n/a            |
| <b>Equipment/infrastructure</b>    |                                                            |                                                            |                |
| Fixed                              | \$ 6,664                                                   | \$ 6,664                                                   | n/a            |
| <b>Total cost</b>                  | <b>\$ 42,197</b>                                           | <b>\$ 42,651</b>                                           | <b>\$ 454</b>  |
| <b>Cost per show</b>               | <b>\$ 811</b>                                              | <b>\$ 790</b>                                              |                |

<sup>°</sup>This includes the time of production and broadcast personnel estimated at 41.7 person hours per ½ hour show produced

\*This includes transport, production and office supplies

†This includes additional airtime

The incremental cost per additional show ( $\$227 = \$454 \div 2$ ) is much lower than the additional cost per print issue produced. This is due to the relatively low cost per show (almost 1/10<sup>th</sup> of print cost per issue) and the dominance of fixed costs in both programs. Once again, the average cost per show falls as more shows are produced due to the ability to spread the fixed costs over additional outputs.

The next section will highlight how the cost and M&E data can be used to estimate the financial and performance implications of program expansion/contraction.

## Illustration of Further Analysis

This section will demonstrate how the information presented above can be used to support a cost-effectiveness analysis of the print vs. the radio activities. In the absence of a true effectiveness measure (incremental change in health behaviors in response to information exposure) the actual analysis can not be performed. Instead, the analysis will be set up and methods that could be used to derive an effectiveness measure will be discussed.

### Deciding between Expanding Print vs. Radio Activities

A key decision when managing the growth of an organization is how to most effectively use the limited resources that are available. In order to assess which strategy is preferred we need to compare both the incremental cost and the incremental effectiveness or benefit. The estimated incremental costs of expansion can be derived from tables 4 and 5 above. The estimated incremental effectiveness needs to be based upon information on: a) the additional number of persons who would be reached by the increased availability of information (based upon probability of exposure as a function of opportunities for exposure), b) the intensity of reach (expected number of exposures as a function of opportunities for exposure), and c) the correlation between exposure and behavior change that can be used to estimate the probability of reducing risky behaviors. This type of data would need to come from a methodologically sound community-based survey. If available, the following table could then be completed.

**Table 6 Comparing expansion of print to expansion of radio**

| Strategy                                       | (1)<br>Incremental<br>Cost | (2)<br>Incremental benefit<br>(# persons who<br>reduce risky<br>behaviors) | (3)<br>Incremental cost<br>per additional<br>person who reduces<br>risky behavior |
|------------------------------------------------|----------------------------|----------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Increase radio by 2 programs &<br>2 hours      | \$ 454                     |                                                                            | (1) ÷ (2)                                                                         |
| Increase print by 2 issues &<br>200,000 copies | \$ 7,786                   |                                                                            | (1) ÷ (2)                                                                         |

The analysis begins by rank ordering the strategies from lowest incremental cost to highest (column 1). The last column is examined to see if the second row in the table has a greater or lower value than in the first row. If the value in the second row is lower, we would prefer to expand print rather than radio assuming sufficient resources are available. If the value in column (3) is lower for the first row, this indicates that radio is a more cost-effective approach for behavior change. And therefore, if sufficient resources are available, this would be the preferred route of program expansion. If the values in column (3) are roughly equivalent, then either route of expansion could be acceptable depending upon availability of resources. A further note of caution is that prior to expansion, the decision maker needs to feel that the values in column (3) are sufficiently low to represent value for money spent. The analysis cannot make that assessment but is used to provide explicit information to the decision-maker.

## Conclusion

With minimal technical assistance, the finance and M&E staff of STF was able to apply basic concepts related to cost and cost-effectiveness analysis. They are now positioned to undertake more targeted evaluations of their programs and make strategic decisions taking both costs and outcomes into account. For example, rather than creating new radio programs or print articles, one option would be to repackage or recycle the information. This has the potential to reduce the costs per show or costs per issue as the field work costs can be spread over more shows/issues than if every show/issue is based upon original data collection.

With an annual cost per person reached of less than \$0.25, both print and radio programs can be considered productive investments of resources. In a highly rural low literacy country like Uganda, and with relatively low incremental costs per show, radio is an effective mass medium and perhaps a "best buy" for HIV prevention. As better outcome measures (such as behavior change in response to information) become available the outcome measures in the Excel workbook should be updated so the productivity and incremental cost-effectiveness of programs can be re-assessed taking these outcomes into account. Documenting the cost and cost-effectiveness of their programs should assist the STF in securing future donor support for their activities. Better outcome measures will be needed for the school environment and community mobilization programs before more detailed evaluation can be conducted for these programs.

As the program evolves, STF can go back to the Excel workbook and update the worksheets for resource identification (personnel, supplies, and equipment/infrastructure), change the allocation of resources to specific service lines, update the financial data, and/or the M&E data on outputs and outcomes to repeat these types of analyses. It will be important that other persons in the organization receive training in these techniques and gain familiarity with the data and the way it is processed so that the skills remain within STF even if one or more staff members leave the organization.

## Appendices

### Appendix I: Productivity Assessments of Specific STF Outputs by Service Line

#### Print services

| Specific outputs<br>(Language)  | Qty of output      |                 | Allocated costs   | Cost per issue   | Cost per copy  | Annual cost per person reached |
|---------------------------------|--------------------|-----------------|-------------------|------------------|----------------|--------------------------------|
|                                 | Copies distributed | Issues produced |                   |                  |                |                                |
| <i>Straight Talk</i> (English)  | 2,860,000          | 11              | \$ 132,970        | \$ 12,088        | \$ 0.05        | \$ 0.46                        |
| <i>Young Talk</i> (English)     | 4,730,000          | 11              | \$ 180,613        | \$ 16,419        | \$ 0.04        | \$ 0.28                        |
| <i>Einer Eitena</i> (Ateso)     | 80,000             | 1               | \$ 7,502          | \$ 7,502         | \$ 0.09        | \$ 0.06                        |
| <i>Lok Atyer Kamaleng</i> (Lwo) | 80,000             | 1               | \$ 7,502          | \$ 7,502         | \$ 0.09        | \$ 0.04                        |
| <i>Twogere Kaati</i> (Luganda)  | 150,000            | 1               | \$ 9,286          | \$ 9,286         | \$ 0.06        | \$ 0.03                        |
| <i>Tusheshuure</i> (4 Rs)       | 150,000            | 1               | \$ 9,286          | \$ 9,286         | \$ 0.06        | \$ 0.03                        |
| <i>Teacher Talk</i>             | 520,000            | 2               | \$ 24,176         | \$ 12,088        | \$ 0.05        | \$ 0.22                        |
| <i>Parent Talk</i> (English)    | 200,000            | 2               | \$ 16,024         | \$ 8,012         | \$ 0.08        | \$ 0.57                        |
| <i>Parent Talk</i> (Luganda)    | 50,000             | 2               | \$ 12,202         | \$ 6,101         | \$ 0.24        | \$ 0.38                        |
| <i>Parent Talk</i> (Ateso)      | 50,000             | 2               | \$ 12,202         | \$ 6,101         | \$ 0.24        | \$ 1.26                        |
| <i>Parent Talk</i> (Lwo)        | 50,000             | 2               | \$ 12,202         | \$ 6,101         | \$ 0.24        | \$ 0.75                        |
| <i>Parent Talk</i> (4Rs)        | 50,000             | 2               | \$ 12,202         | \$ 6,101         | \$ 0.24        | \$ 0.33                        |
| <i>Tree Talk</i>                | 560,000            | 2               | \$ 25,196         | \$ 12,598        | \$ 0.04        | \$ 0.47                        |
| <i>Farm Talk</i>                | 840,000            | 3               | \$ 37,793         | \$ 12,598        | \$ 0.04        | \$ 0.70                        |
| <i>Kids Time</i> (English)      | 220,000            | 1               | \$ 11,069         | \$ 11,069        | \$ 0.05        | \$ 0.16                        |
| <i>Kids Time</i> (Luganda)      | 100,000            | 1               | \$ 8,012          | \$ 8,012         | \$ 0.08        | \$ 0.20                        |
| <i>Straight Talk</i> (Sudanese) | 100,000            | 2               | \$ 13,476         | \$ 6,738         | \$ 0.13        | n/a                            |
|                                 | <b>10,790,000</b>  | <b>47</b>       | <b>\$ 531,713</b> | <b>\$ 11,313</b> | <b>\$ 0.05</b> | <b>\$ 0.24</b>                 |

## Radio services

| Specific outputs (Language) | Qty of output |                | Allocated costs   | Cost per show | Cost per 1/2 hour | Annual cost per person reached |
|-----------------------------|---------------|----------------|-------------------|---------------|-------------------|--------------------------------|
|                             | Hours aired   | Shows produced |                   |               |                   |                                |
| Luganda                     | 130           | 52             | \$ 48,821         | \$ 939        | \$ 187.77         | \$ 0.07                        |
| 4Rs                         | 156           | 52             | \$ 52,133         | \$ 1,003      | \$ 167.09         | \$ 0.04                        |
| Lwo                         | 104           | 52             | \$ 45,509         | \$ 875        | \$ 218.79         | \$ 0.10                        |
| Ateso                       | 78            | 52             | \$ 42,197         | \$ 811        | \$ 270.50         | \$ 0.12                        |
| Lugbara                     | 52            | 52             | \$ 38,885         | \$ 748        | \$ 373.90         | \$ 0.16                        |
| Lugisu                      | 52            | 52             | \$ 38,885         | \$ 748        | \$ 373.90         | \$ 0.18                        |
| Lusamia                     | 52            | 52             | \$ 38,885         | \$ 748        | \$ 373.90         | \$ 0.38                        |
| Lukonzo                     | 52            | 52             | \$ 38,885         | \$ 748        | \$ 373.90         | \$ 0.37                        |
| English                     | 364           | 52             | \$ 78,630         | \$ 1,512      | \$ 108.01         | \$ 0.30                        |
| Kupsabinny                  | 78            | 25.5           | \$ 25,757         | \$ 1,010      | \$ 165.11         | \$ 0.82                        |
| Lusoga                      | 78            | 25.5           | \$ 25,757         | \$ 1,010      | \$ 165.11         | \$ 0.06                        |
|                             | <b>1,196</b>  | <b>519</b>     | <b>\$ 474,345</b> | <b>\$ 914</b> | <b>\$ 198.30</b>  | <b>\$ 0.11</b>                 |

## School environment

| Specific outputs  | Qty of output | Unit           | Allocated costs   | Cost per school | Annual cost per student |
|-------------------|---------------|----------------|-------------------|-----------------|-------------------------|
| Primary schools   | 1,907         | Schools        | \$ 128,663        | \$ 67           | \$ 2.70                 |
| Secondary schools | 60            | Schools        | \$ 6,072          | \$ 101          | \$ 4.05                 |
|                   | <b>1,967</b>  | <b>Schools</b> | <b>\$ 134,735</b> | <b>\$ 68</b>    | <b>\$ 2.74</b>          |

**Community mobilization**

| <b>Specific outputs</b>                         | <b>Qty of output</b> | <b>Unit</b> | <b>Allocated costs</b> | <b>Cost per unit</b> | <b>Annual cost per person</b> |
|-------------------------------------------------|----------------------|-------------|------------------------|----------------------|-------------------------------|
| Health fairs                                    | 9                    | Fairs       | \$ 81,626              | \$ 9,070             | \$ 3.63                       |
| Gulu Youth Center (GYC) – VCT                   | 3,619                | Visits      | \$ 10,897              | \$ 3.01              | \$ 0.82                       |
| GYC – General counseling                        | 209                  | Visits      | \$ 629                 |                      |                               |
| GYC – Medical cases                             | 2,238                | Visits      | \$ 6,739               |                      |                               |
| GYC – Games/infotainment                        | 6,706                | Visits      | \$ 20,193              |                      |                               |
|                                                 |                      |             | <b>\$ 120,084</b>      |                      |                               |
|                                                 |                      |             |                        |                      |                               |
| <b>Total resources used across all programs</b> |                      |             | <b>\$ 1,260,878</b>    |                      |                               |

## Appendix II: Estimating Program Reach

### Step 1 Estimate target populations

| Ethnic group<br>(1) | Language<br>(2) | Total population<br>(3) | Age 10–19<br>(4) | Age 15-19<br>(5) |
|---------------------|-----------------|-------------------------|------------------|------------------|
| Baganda             | Luganda         | 4,561,730               | 1,149,556        | 413,838          |
| Basoga              | Lusoga          | 2,280,572               | 574,704          | 206,893          |
| Iteso               | Ateso           | 1,734,277               | 437,038          | 157,333          |
| Luo                 | Lwo             | 2,908,360               | 732,907          | 263,845          |
| Bakonzo             | Lukonzo         | 551,114                 | 138,881          | 49,997           |
| Sabiny              | Kupsabinny      | 200,089                 | 50,422           | 18,152           |
| Basamia             | Lusamia         | 582,000                 | 146,664          | 52,799           |
| Bagisu              | Lugisu          | 1,235,581               | 311,366          | 112,091          |
| Lugbara             | Lugbara         | 1,130,092               | 284,783          | 102,521          |
| 4Rs                 | 4Rs             | 6,530,525               | 1,645,692        | 592,447          |
|                     |                 | <b>21,714,340</b>       | <b>5,472,014</b> | <b>1,969,916</b> |
|                     |                 | 80.4%                   | 20.3%            | 7.3%             |
|                     |                 |                         |                  |                  |
|                     | Any English     | 8,106,270               | 2,042,780        | 735,398          |
|                     | Only English    | 1,591,968               | 401,176          | 144,423          |
|                     |                 |                         |                  |                  |
|                     | All Uganda      | <b>27,020,900</b>       | <b>6,809,267</b> | <b>2,451,325</b> |
|                     |                 | <b>100.0%</b>           | <b>25.2%</b>     | <b>9.1%</b>      |

Sources: Column 3 provided by STF.

- the row for “Any English” is estimated as 30 percent of the all Uganda population per STF
- the row for “Only English” is estimated as 30 percent of the difference between all Uganda and those accounted for in the language specific rows

Column 4 is estimated as 25.2 percent of column 3 (based upon all Uganda age distribution). Column 5 estimated as 9.1 percent of column 3 (based upon all Uganda age distribution).

**Step 2 Estimate size of target populations for specific outputs**

| Specific outputs (Language)     | Size of target population | Estimate based upon                                                                                           |
|---------------------------------|---------------------------|---------------------------------------------------------------------------------------------------------------|
| <b>Print</b>                    |                           |                                                                                                               |
| <i>Straight Talk</i> (English)  | 735,398                   | Table above any English age 15–19                                                                             |
| <i>Young Talk</i> (English)     | 1,307,382                 | Table above any English age 10–15 (10–19 less 15–19)                                                          |
| <i>Einer Eitena</i> (Ateso)     | 437,038                   | Table above age 10–19                                                                                         |
| <i>Lok Atyer Kamaleng</i> (Lwo) | 732,907                   | “                                                                                                             |
| <i>Twogere Kaati</i> (Luganda)  | 1,149,556                 | “                                                                                                             |
| <i>Tusheshuure</i> (4Rs)        | 1,645,692                 | “                                                                                                             |
| <i>Teacher Talk</i>             | 147,242                   | Estimate provided by STF                                                                                      |
| <i>Parent Talk</i> (English)    | 225,720                   | Assumes 10% of all Uganda are in target age group and takes 20% of those not covered in language groups below |
| <i>Parent Talk</i> (Luganda)    | 456,173                   | 10% of all Baganda literate and in target age group                                                           |
| <i>Parent Talk</i> (Ateso)      | 138,742                   | 8% of all Iteso literate and in target group                                                                  |
| <i>Parent Talk</i> (Lwo)        | 232,669                   | 8% of all Luo literate and in target group                                                                    |
| <i>Parent Talk</i> (4Rs)        | 522,442                   | 8% of all 4Rs literate and in target group                                                                    |
| <i>Tree Talk</i>                | 179,640                   | Only English age 10–15 with 78% school enrollment and 89.7% schools receiving                                 |
| <i>Farm Talk</i>                | 179,640                   | Only English age 10–15 with 78% school enrollment and 89.7% schools receiving                                 |
| <i>Kids Time</i> (English)      | 200,268                   | Only English age 10–15 with 78% school enrollment                                                             |
| <i>Kids Time</i> (Luganda)      | 573,860                   | Baganda age 10–15 with 78% school enrollment                                                                  |
| <b>Radio (Language)</b>         |                           |                                                                                                               |
| Luganda                         | 1,149,556                 | Table above age 10–19                                                                                         |
| 4Rs                             | 1,645,692                 | “                                                                                                             |
| Luo                             | 732,907                   | “                                                                                                             |
| Ateso                           | 437,038                   | “                                                                                                             |
| Lugbara                         | 284,783                   | “                                                                                                             |
| Lugisu                          | 311,366                   | “                                                                                                             |
| Lusamia                         | 146,664                   | “                                                                                                             |
| Lukonzo                         | 138,881                   | “                                                                                                             |
| English                         | 401,176                   | “                                                                                                             |
| Kupsabinny                      | 50,422                    | “                                                                                                             |
| Lusoga                          | 574,704                   | “                                                                                                             |

### Step 3 Apply reach estimates for specific outputs to target populations

| Specific outputs (Language)     | Size of target population | % of target seeing one issue (from STF) | Estimated # of persons reached |
|---------------------------------|---------------------------|-----------------------------------------|--------------------------------|
| <i>Straight Talk</i> (English)  | 735,398                   | 39.3%                                   | 289,011                        |
| <i>Young Talk</i> (English)     | 1,307,382                 | 48.6%                                   | 635,388                        |
| <i>Einer Eitena</i> (Ateso)     | 437,038                   | 28.9%                                   | 126,304                        |
| <i>Lok Atyer Kamaleng</i> (Lwo) | 732,907                   | 28.0%                                   | 205,214                        |
| <i>Twogere Kaati</i> (Luganda)  | 1,149,556                 | 28.0%                                   | 321,876                        |
| <i>Tusheshuure</i> (4Rs)        | 1,645,692                 | 20.3%                                   | 334,076                        |
| <i>Teacher Talk</i>             | 147,242                   | 73.6%                                   | 108,370                        |
| <i>Parent Talk</i> (English)    | 225,720                   | 12.5%                                   | 28,215                         |
| <i>Parent Talk</i> (Luganda)    | 456,173                   | 7.0%                                    | 31,932                         |
| <i>Parent Talk</i> (Ateso)      | 138,742                   | 7.0%                                    | 9,712                          |
| <i>Parent Talk</i> (Lwo)        | 232,669                   | 7.0%                                    | 16,287                         |
| <i>Parent Talk</i> (4Rs)        | 522,442                   | 7.0%                                    | 36,571                         |
| <i>Tree Talk</i>                | 179,640                   | 30.0%                                   | 53,892                         |
| <i>Farm Talk</i>                | 179,640                   | 30.0%                                   | 53,892                         |
| <i>Kids Time</i> (English)      | 200,268                   | 34.4%                                   | 68,892                         |
| <i>Kids Time</i> (Luganda)      | 573,860                   | 7.0%                                    | 40,170                         |
| <b>Total</b>                    |                           |                                         | <b>2,252,017</b>               |
| <b>Radio (Language)</b>         |                           |                                         |                                |
| Luganda                         | 1,149,556                 | 65.0%                                   | 742,211                        |
| 4Rs                             | 1,645,692                 | 75.1%                                   | 1,235,915                      |
| Lwo                             | 732,907                   | 64.5%                                   | 472,725                        |
| Ateso                           | 437,038                   | 80.2%                                   | 350,504                        |
| Lugbara                         | 284,783                   | 84.3%                                   | 240,072                        |
| Lugisu                          | 311,366                   | 70.0%                                   | 217,956                        |
| Lusamia                         | 146,664                   | 70.0%                                   | 102,665                        |
| Lukonzo                         | 138,881                   | 75.0%                                   | 104,161                        |
| English                         | 401,176                   | 65.0%                                   | 260,764                        |
| Kupsabinny                      | 50,422                    | 62.0%                                   | 31,262                         |
| Lusoga                          | 574,704                   | 69.0%                                   | 395,546                        |
| <b>Total</b>                    |                           |                                         | <b>4,159,782</b>               |

Note: *Tree Talk* and *Farm Talk* not counted in total since these overlap with *Kids Time* in distribution network (schools). Radio reach is estimated from a separate study and estimates provided by STF staff.