

# *WASH Sustainability Index Tool*



**USAID**  
FROM THE AMERICAN PEOPLE

Webinar

20 November 2013

**AGUA**CONSULT  




international **h<sub>2</sub>O** collaboration

# Structure of the Tool

## Components:

1. PDF Guiding Document
  - 374 MB “complete” version
  - 37 MB “smaller” version
2. Videos (complete only)
3. Excel Frameworks (both)

Available at <http://www.washplus.org/rotary-usaid>

# Download PDF

Open zip file "USAID\_WASH"

Copy subfolder and contents to permanent location (eg-desktop)

www.washplus.org/rotary-usaid

Supportive Environments for Healthy Communities

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## WASH Sustainability Index Tool

Developed with support from the USAID-Rotary International H2O Collaboration, the **WASH Sustainability Index Tool** can be used to assess the likely sustainability of WASH interventions using a range of qualitative and quantitative indicators. Use the links below to download a guiding document that has step-by-step instructions on how to apply the Sustainability Index Tool.

**Two versions of the Tool are provided:**

- A complete version (370 MB)
- A smaller version (37 MB). The smaller file size does not contain the instructional videos and should be utilized only after the full version with all videos has been reviewed.

**Downloading Instructions**

- **Complete Version-WASH Sustainability Index Tool.** Click [here](#) to download a folder containing the complete version (370MB) of the WASH Sustainability Index Tool and the accompanying resource files. Please note: the USAID\_WASH folder must be unzipped and saved to your desktop for the pdf file within and accompanying spreadsheets in the resources folder to function correctly.
- **Limited Version-WASH Sustainability Index Tool.** Click [here](#) to download a folder containing the smaller version (37MB) of the WASH Sustainability Index Tool and the accompanying resource files. Please note: the USAID\_WASH\_LITE folder must be unzipped and saved to your desktop for the pdf file within and accompanying spreadsheets in the resources folder to

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USAID\_WASH (1).zip  
1.5/365 MB, 19 mins left

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19/11/2013

# PDF Guiding Document

Detailed step by step guidance of the process

Embedded videos

Excel framework spreadsheets



# Videos

- 7 total (including navigation video)



- camera icon link

- 3 accompanying excel files

- Download the excel files by clicking “open”

USAID\_V... sustainability... Adobe Reader

File Edit View Window Help

Tools Sign Comment

Click "Sign" to fill out and sign this form. When you are done, you can save a copy by clicking "Done Signing".

Highlight Existing Fields

## 2 Sustainability Index Tool

Household sample size calculation video

close X

**Open**  
Household sample size calculation

Section 2.2 Household sample size calculation - Microsoft Excel

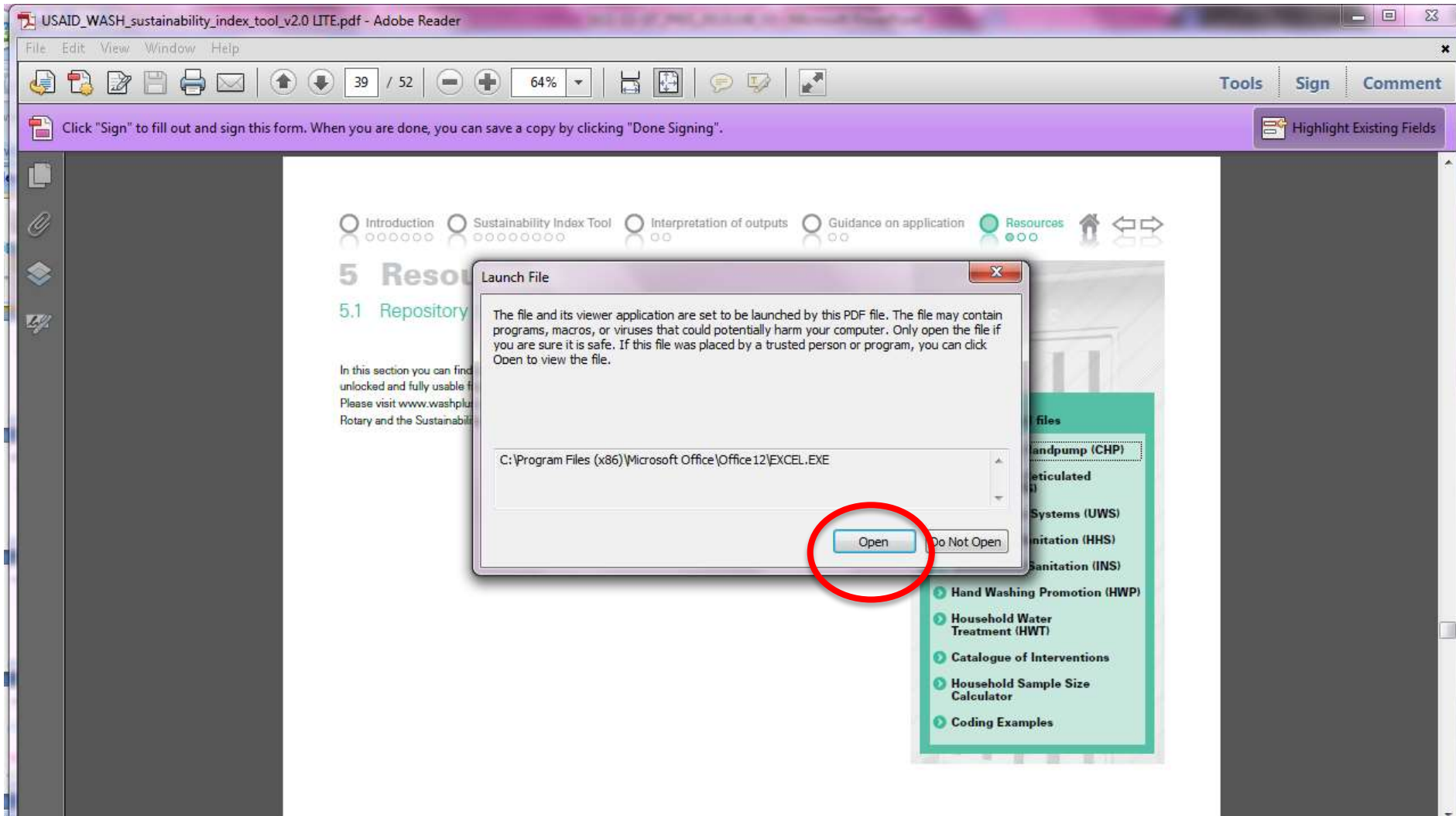
Statistical Parameters	
Estimated Variance (P)	0.5
Margin of Error	(+/-) 5.0%
Confidence Level	95.0%
Estimated response rate (RR)	90%

	Intervention Type					Total
	CHP	CRS	UWS	HHS	INS	
Total Households						
Household				#DIV/0!	#DIV/0!	#DIV/0!

# Downloads from PDF

## “Launch File” dialogue box



# Excel Framework

Total of 7 framework files

Each file is 1 indicator type

Locked (Section 2.1) – ability to change values in pink cells

Unlocked (Section 5) – modify all content

## (WT-CHP) Community Hand Pump



REFERENCE		Water Community Hand pump Indicators
WT-CHP-I-R1		National policy, norms and guidelines for community-managed water supply and sanitation legislation is in place
WT-CHP-I-R4		Roles and responsibilities of district/local authorities and community arrangements are already defined
WT-CHP-I-S1		There is a water committee which has been constituted in line with national norms and standards
WT-CHP-H-R1		There is an updated national monitoring system or database available
WT-CHP-H-R2		National support to district/local authorities is provided, including for resource mobilization
WT-CHP-H-S1		There is regular monitoring of water services and community-managed water provision and following support
WT-CHP-H-S2		Representative water committee reflects managed water point with elected representatives and representatives
WT-CHP-H-S3		Water committee members actively participate in committee meetings and decision-making processes and reporting to management
WT-CHP-F-R1		There are national/local workplans based community needs/interests and facilities, in order to equate needs, while ensuring other facilities, equity and non-discrimination
WT-CHP-F-S1		Resource available for district/local authorities to fulfill facilities
WT-CHP-F-S2		Timely collection of water and sanitation
WT-CHP-F-S3		Timely collection of water and sanitation
WT-CHP-T-R1		The water committee demonstrates effective financial management and accounting
WT-CHP-T-R2		There are national/local norms that define acceptable service levels with explicit indicators and thresholds (e.g. water quality, quantity, accessibility, affordability, etc.)
WT-CHP-T-R3		There are national/local norms that define equipment standards and arrangements for providing spare parts
WT-CHP-T-S1		The district water staff are able to provide support for maintenance and repairs as required
WT-CHP-T-S2		Hand pump is functional and provides basic level of service according to national policy
WT-CHP-T-S3		Hand pump complies with standards and norms in terms of safety and public health risk
WT-CHP-T-S4		The knowledge and spare parts are available to conduct maintenance and repairs in a timely manner
WT-CHP-E-R1		National environmental protection standards are established and applied to WASH services
WT-CHP-E-R2		National integrated water resources management plan is in place, updated regularly, and applied to WASH services planning
WT-CHP-E-S1		Local water-based management plan is in place, updated regularly, and applied to WASH services planning
WT-CHP-E-S2		Water resources are managed in support of sustainable WASH service delivery

Factor Weighting	Community 1	Community 2	Community 3	Community 4	Community 5	Community 6	All Communities
20% Institutional	50%	45%	40%	55%	50%	50%	50%
20% Managerial	50%	45%	40%	55%	50%	50%	45%
20% Financial	50%	45%	40%	55%	50%	50%	45%
10% Technical	40%	40%	50%	45%	45%	45%	45%
10% Environmental	50%	45%	40%	55%	50%	50%	45%
10% Overall Sustainability Index Score	50%	47%	54%	48%	48%	48%	48%

REFERENCE	Primary Indicators	Sub-Indicators	Indicator Description	Response	Source	Comments	Community 1	Community 2	Community 3	Community 4	Community 5	Community 6	All Communities
WT-CHP-I-R1	Is	Is	National policy, norms and guidelines for community-managed water supply and sanitation legislation is in place	Yes/No	Source	Comments	50%	50%	50%	50%	50%	50%	50%
WT-CHP-I-R4	H	H	Roles and responsibilities of district/local authorities and community arrangements are already defined	Yes/No	Source	Comments	50%	50%	50%	50%	50%	50%	50%
WT-CHP-I-S1	H	H	There is a water committee which has been constituted in line with national norms and standards	Yes/No	Source	Comments	50%	50%	50%	50%	50%	50%	50%
WT-CHP-H-R1	H	H	There is an updated national monitoring system or database available	Yes/No	Source	Comments	50%	50%	50%	50%	50%	50%	50%
WT-CHP-H-R2	H	H	National support to district/local authorities is provided, including for resource mobilization	Yes/No	Source	Comments	50%	50%	50%	50%	50%	50%	50%
WT-CHP-H-S1	H	H	There is regular monitoring of water services and community-managed water provision and following support	Yes/No	Source	Comments	50%	50%	50%	50%	50%	50%	50%
WT-CHP-H-S2	H	H	Representative water committee reflects managed water point with elected representatives and representatives	Yes/No	Source	Comments	50%	50%	50%	50%	50%	50%	50%
WT-CHP-H-S3	H	H	Water committee members actively participate in committee meetings and decision-making processes and reporting to management	Yes/No	Source	Comments	50%	50%	50%	50%	50%	50%	50%
WT-CHP-F-R1	H	H	There are national/local workplans based community needs/interests and facilities, in order to equate needs, while ensuring other facilities, equity and non-discrimination	Yes/No	Source	Comments	50%	50%	50%	50%	50%	50%	50%
WT-CHP-F-S1	SP	SP	Resource available for district/local authorities to fulfill facilities	Yes/No	Source	Comments	50%	50%	50%	50%	50%	50%	50%
WT-CHP-F-S2	SP	SP	Timely collection of water and sanitation	Yes/No	Source	Comments	50%	50%	50%	50%	50%	50%	50%
WT-CHP-F-S3	SP	SP	Timely collection of water and sanitation	Yes/No	Source	Comments	50%	50%	50%	50%	50%	50%	50%
WT-CHP-T-R1	H	H	The water committee demonstrates effective financial management and accounting	Yes/No	Source	Comments	50%	50%	50%	50%	50%	50%	50%
WT-CHP-T-R2	H	H	There are national/local norms that define acceptable service levels with explicit indicators and thresholds (e.g. water quality, quantity, accessibility, affordability, etc.)	Yes/No	Source	Comments	50%	50%	50%	50%	50%	50%	50%
WT-CHP-T-R3	H	H	There are national/local norms that define equipment standards and arrangements for providing spare parts	Yes/No	Source	Comments	50%	50%	50%	50%	50%	50%	50%
WT-CHP-T-S1	H	H	The district water staff are able to provide support for maintenance and repairs as required	Yes/No	Source	Comments	50%	50%	50%	50%	50%	50%	50%
WT-CHP-T-S2	H	H	Hand pump is functional and provides basic level of service according to national policy	Yes/No	Source	Comments	50%	50%	50%	50%	50%	50%	50%
WT-CHP-T-S3	H	H	Hand pump complies with standards and norms in terms of safety and public health risk	Yes/No	Source	Comments	50%	50%	50%	50%	50%	50%	50%
WT-CHP-T-S4	H	H	The knowledge and spare parts are available to conduct maintenance and repairs in a timely manner	Yes/No	Source	Comments	50%	50%	50%	50%	50%	50%	50%
WT-CHP-E-R1	H	H	National environmental protection standards are established and applied to WASH services	Yes/No	Source	Comments	50%	50%	50%	50%	50%	50%	50%
WT-CHP-E-R2	H	H	National integrated water resources management plan is in place, updated regularly, and applied to WASH services planning	Yes/No	Source	Comments	50%	50%	50%	50%	50%	50%	50%
WT-CHP-E-S1	H	H	Local water-based management plan is in place, updated regularly, and applied to WASH services planning	Yes/No	Source	Comments	50%	50%	50%	50%	50%	50%	50%
WT-CHP-E-S2	H	H	Water resources are managed in support of sustainable WASH service delivery	Yes/No	Source	Comments	50%	50%	50%	50%	50%	50%	50%

# Framework Components

WT-CHP-M-N1	Primary Investigation Method	Triangulation
WT-CHP-M-N1a	NL	
WT-CHP-M-N1b	NL	
WT-CHP-M-N1c	NL	
WT-CHP-M-N1d	NL	

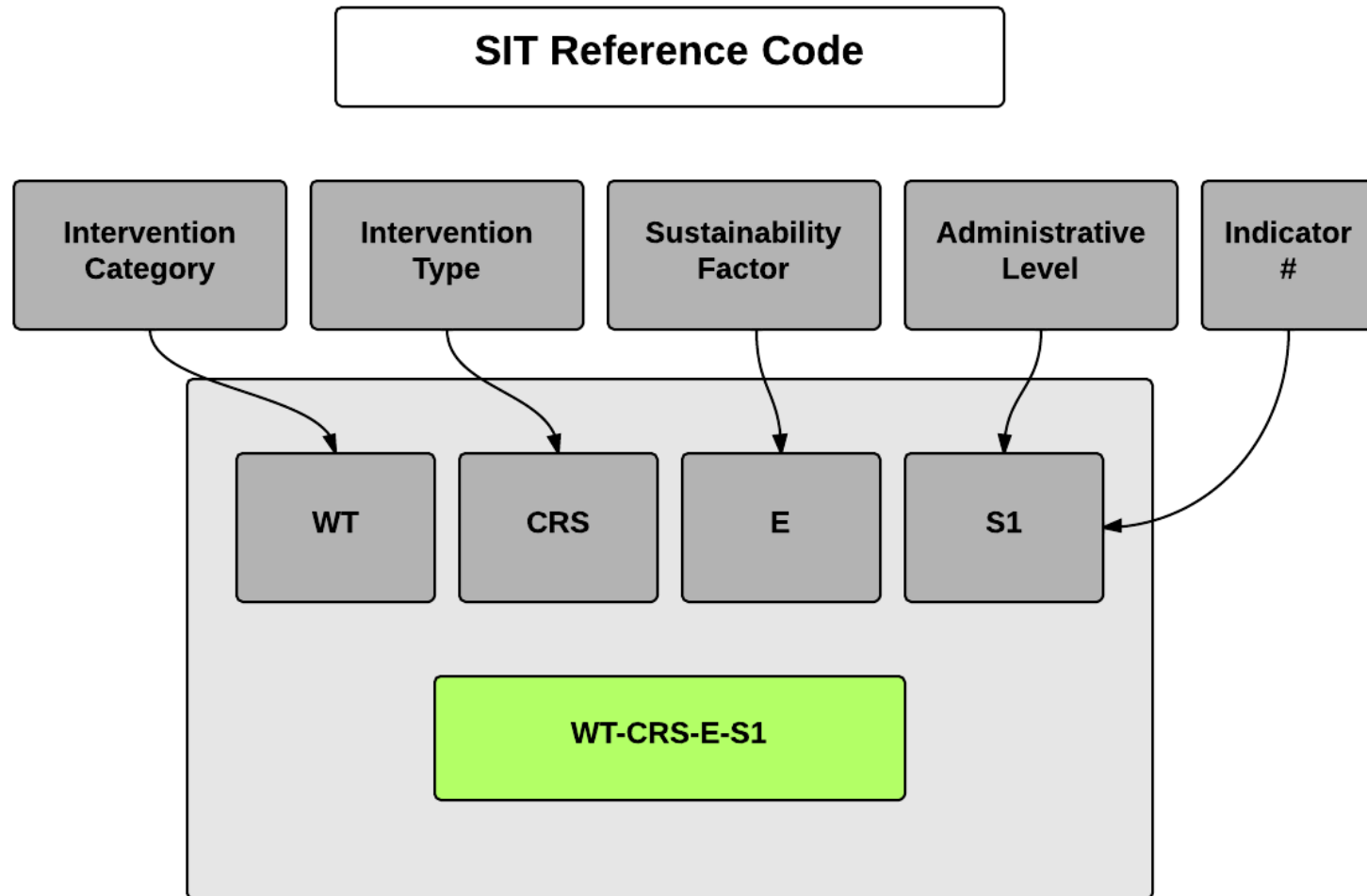
WT-CHP-M-N2	Primary Investigation Method	Triangulation
WT-CHP-M-N2a	NL	DS
WT-CHP-M-N2b	NL	DS
WT-CHP-M-N2c	NL	

WT-CHP-F-SP1	Primary Investigation Method	Triangulation
WT-CHP-F-SP1a	SP	
WT-CHP-F-SP1b	SP	DS
WT-CHP-F-SP1c	SP	



# Reference Code



# Intervention Categories

1. Water supply (WT)
2. Sanitation (SN)
3. Hygiene (HY)



Water  
supply






Sanitation



Hygiene  
promotion

# Intervention Types (developed to-date)

- 
- 
- 
- 1. **CRS**- community reticulated systems
  - 2. **CHP**- community handpumps
  - 3. **UWS**- utility water systems
  - 4. **WSP** – water source protection
  - 5. **WPS**- water pan systems
  - 6. **RWH**- rainwater harvesting
  - 7. **INS**- Institutional sanitation
  - 8. **HHS**- Household Sanitation
  - 9. **HWP**- Hygiene and handwashing promotion
  - 10. **HWT**- Household water treatment

# Sustainability Factors



Institutional



Management



Financial



Technical

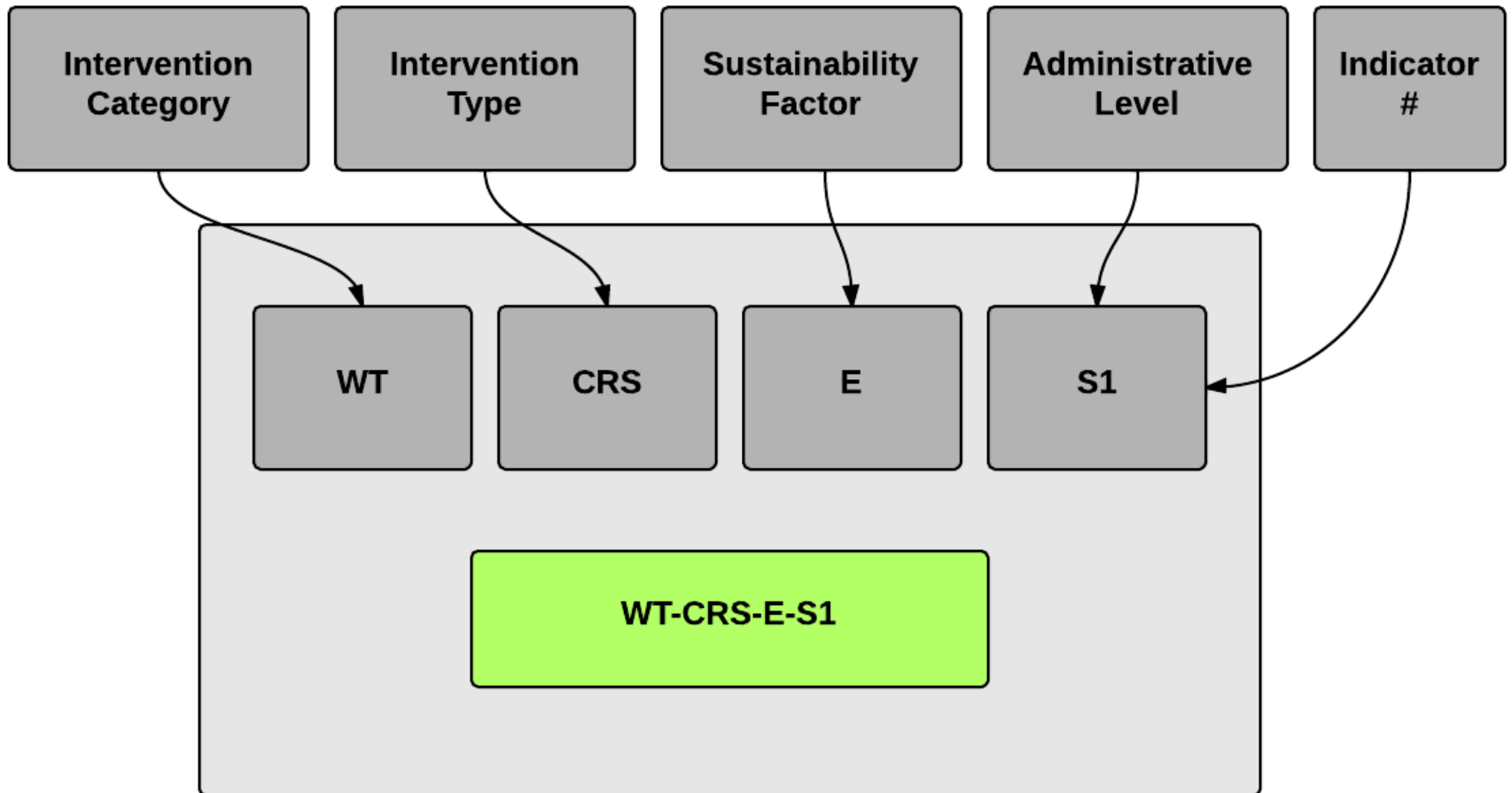


Environmental

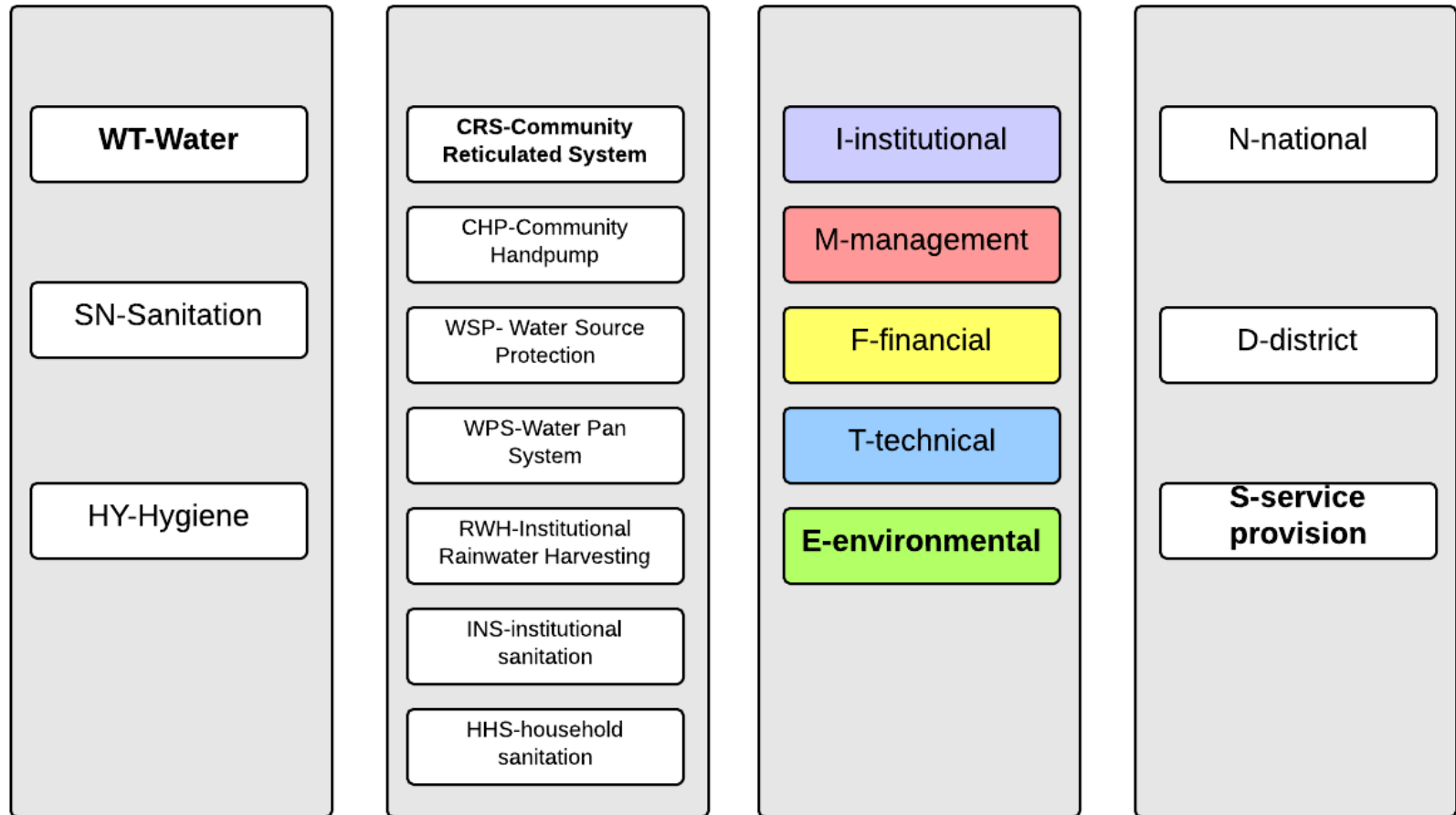
# Administrative Level: Tanzania

<b>WASH SIT Code</b>	<b>Administrative Level</b>
N	Republic
	Region
D	District
	Division
	Local Ward
S	Village
	Sub-Village/Hamlet

# SIT Reference Code



# Indicator: WT-CRS-E-S1



# Nomenclature

Component	Description	Code
Factor	5 for each indicator type	I, M, F, T, E
Indicator	1-4 per factor 14-23 per intervention type	1, 2, 3, 4
Sub-Indicator	Usually 4 per indicator	a, b, c, d
Question*	1-3 per sub-indicator	i, ii, iii**


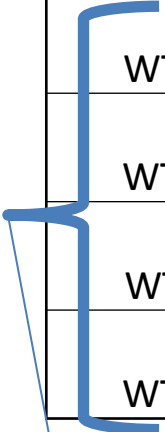

\*often the question is the same as the sub-indicator

\*\* code isn't shown in framework



# Sub-Indicators

Indicator

 <b>WT-CRS-F-S3</b>	<b>Primary Investigation Method</b>	<b>Triangulation</b>	<b>The water committee demonstrates effective financial management and accounting</b>
 WT-CRS-F-S3a	SP		a) Does the water committee keep financial records? (verify)
WT-CRS-F-S3b	SP		b) Does the committee have a bank account? (verify)
WT-CRS-F-S3c	SP	 HH	c) Does the committee share financial records with the community on a regular basis?
WT-CRS-F-S3d	SP		d) Are financial accounts audited? (verify)

Sub-Indicators

Sources of Information or “stakeholders”  
 Service Providers and Households within  
 Village or Sub-village

# Questions

WT-CRS-F-S2	Primary Investigation Method	Tariff collection is regular and sufficient
WT-CRS-F-S2a	SP	a) Is the tariff collected on a regular schedule (e.g. on pay-as-you -fetch basis, or monthly household levies, instead of collecting money when there is a breakdown)?
<b>WT-CRS-F-S2b</b>	SP	<b>b) What is the annual revenue? (verify) What is the annual operating expenditure? (verify) Is the annual revenue greater than the annual expenditure?</b>
WT-CRS-F-S2c	SP	c) Is there a national/local target for collection efficiency (i.e. percent who regularly pay)
WT-CRS-F-S2d	SP	d) Do most (at least 80%, or a proportion in line with national or locally set standards) households pay the tariff? (i.e. Are they achieving the specified collection efficiency)

Sub-Indicator

Specific Questions

<b>WT-CRS-F-S2b</b>	<p><b>(i) What is the annual revenue?</b> Tshs _____(verify)</p> <p><b>(ii) What is the annual operating expenditure?</b> Tshs. _____ (verify)</p>
---------------------	--

# Scoring

1. Field scoring- mark “Yes” or “No” (majority)
2. Post collection scoring:
  - Numerical data (must be analyzed, calc statistic)
  - Benchmark unknown or doesn’t exist
  - Capture valuable information

# Application of the Sustainability Index Tool




# Landscaping

- Range of intervention types
- Location of interventions (i.e. “community” or smallest administrative unit)
- Number of unique interventions

# Statistical Design and Sampling

**Example** RI-USAID



→ go to the gutter side  
 → create map  
 → determine # clusters # pop/cluster

For example...

Total project 140,000 beneficiaries  
 140 communities  
 3 regions

→ Sketch a map maybe 6 clusters total  
 2 clusters/region  
 3 communities/cluster  
 based on population and urban

→ **10** would be 10 communities

→ determine start parameters (10% within 27% 55% etc)

→ **10** sub sample size


given 140,000 beneficiaries = N  $n = 162$  → **10** clusters **10** lines of other clusters dist  
 beneficiaries of water

→  $\frac{n}{\text{community}} = \frac{162}{18} = 9$  surveys per community (5%)  
 Area to 2 buildings 2 survey

→ **10** Select sample

For example, **10** Strata by gender of head of h/h.

Community A



Community A **10** Sample in Community A **10**  
 75 male headed  
 19 male headed  
 22 female headed

$\left(\frac{75 \text{ male headed}}{140 \text{ total}}\right) \times 9 \text{ surveys} = 4.8 \approx 5$   
 $\left(\frac{22 \text{ female headed}}{140 \text{ total}}\right) \times 9 \text{ surveys} = 1.4 \approx 1$

74.4 - Randomly chosen  
 74.5 - Systematically chosen  
 For male headed - chosen every  $k = \frac{4}{16} = 2.5$   
 Female headed - chosen every  $k = \frac{2}{12} = 1.6$

too complicated ⇒

# General Statistical Design

- **Focus on service provider**
- **Primary unit of analysis dictates:**
  - HH interventions (e.g. household latrines) target sample size (# HHs) statistically determined
  - Community interventions- (e.g.-community water systems) comprehensive inclusion (i.e. all water point management groups in community)
- **Best practice minimum sample size**
- **Heterogeneity:** inter-community is greater than intra-community
- **To overcome resource constraints - Less Is More:** to improve heterogeneity of SP and district responses, include more communities, but less HH in each community.
- **Stratification requires knowledge:** geographic stratification captures regional differences, rural/urban stratification also important

# Sampling Strategy

- Literature review of sampling strategies (16 different assessments)
- Key distinction – this is not impact assessment

Impact Assessment	Sustainability Index Tool
Compare test to baseline/control	Understand context of intervention and risks/success factors
Focus on beneficiary/users	Focus on flow of <b>services</b> over time



# Creating Questionnaires

- Each indicator question assigned a primary unit of analysis
- “Filter” tab in excel used to create questionnaires
- Some sub-indicators/questions are triangulated (multiple stakeholders)

Question Number	Primary Unit of Analysis	Triangulation	Indicator/Sub-Indicator
WT-CRS-I-SP1			<b>There is a water committee which has been constituted in line with national norms and standards</b>
WT-CRS-I-SP1e	SP	HH	e) Has the water committee been democratically elected with involvement of the entire community?
WT-CRS-M-SP1			<b>Representative water committee actively manages water point with clearly defined roles and responsibilities</b>
WT-CRS-M-SP1b	SP	HH	b) Does the water committee carry out all the roles required of it?
WT-CRS-M-SP2			<b>Water committee members actively participate in Committee meetings and decision making process and reporting is transparent</b>
WT-CRS-M-SP2d	SP	HH	d) Are technical, administrative and financial records kept and shared with the community on regular basis?
WT-CRS-F-SP3			<b>The water committee demonstrates effective financial management and accounting</b>
WT-CRS-F-SP3c	SP	HH	c) Does the committee share financial records with the community on a regular basis?

# Contextualization

1. Important and time consuming
2. Multiple steps
  - General (sub-indicator separated into multiple specific question)
  - Adapt (insert local benchmarks/standards)
3. Engage local authorities and WASH experts

# Pilot Test

1. Make sure to pre-test with survey team during training (questions flow)
2. Pilot test each tool
3. “Dry rehearsal”
4. Ensure that each question is interpreted the same
5. Sufficient time for feedback from survey team and modification of tools

# Data Collection Methods

- Household surveys with observations
- System or facility observation and checks
- Key informant interviews: service providers, private sector suppliers, decentralised and national government
- Contract/bank account checks; document review of national policy, legislation and local by-laws



# Data Collection Teams

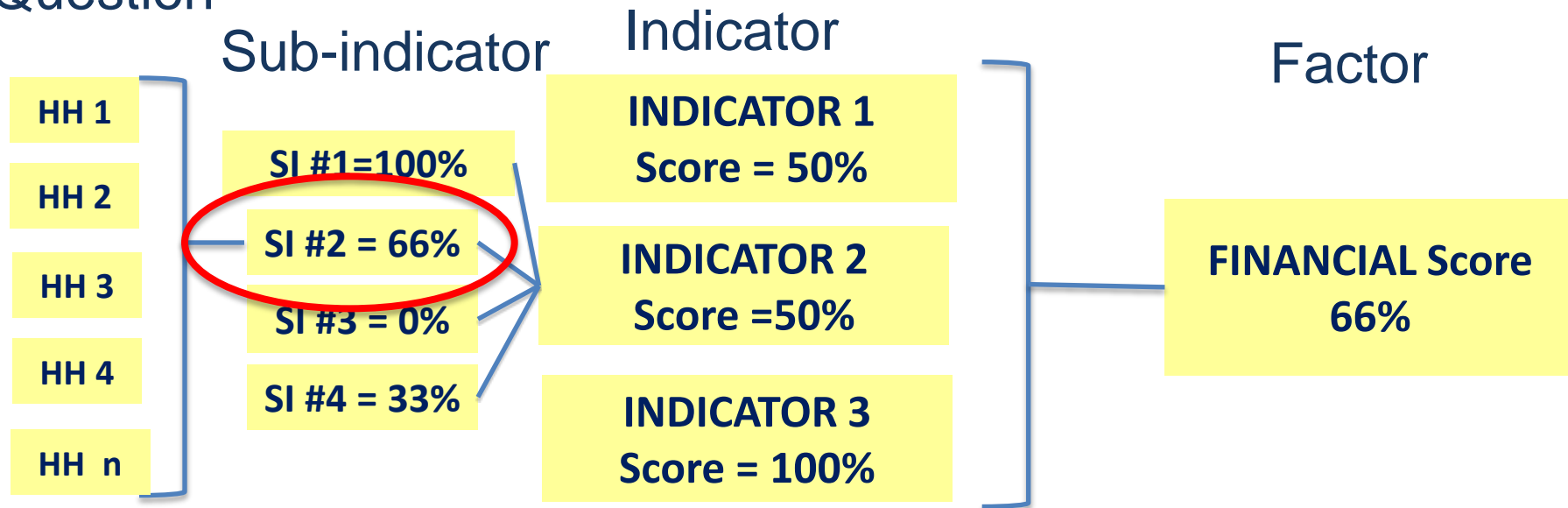
- country coordinators and survey team leaders
- Teams of enumerators
- Two approaches to data collection:
  - i. Paper
  - ii. Digital handset



# Data Analysis

- No=0 ; YES =1
- Household responses aggregated to single response (66% YES)
- Question responses aggregated to sub-indicator, and sub-indicator to indicator for each community and intervention type
- Indicator scores aggregated by factor by community by intervention

## Question

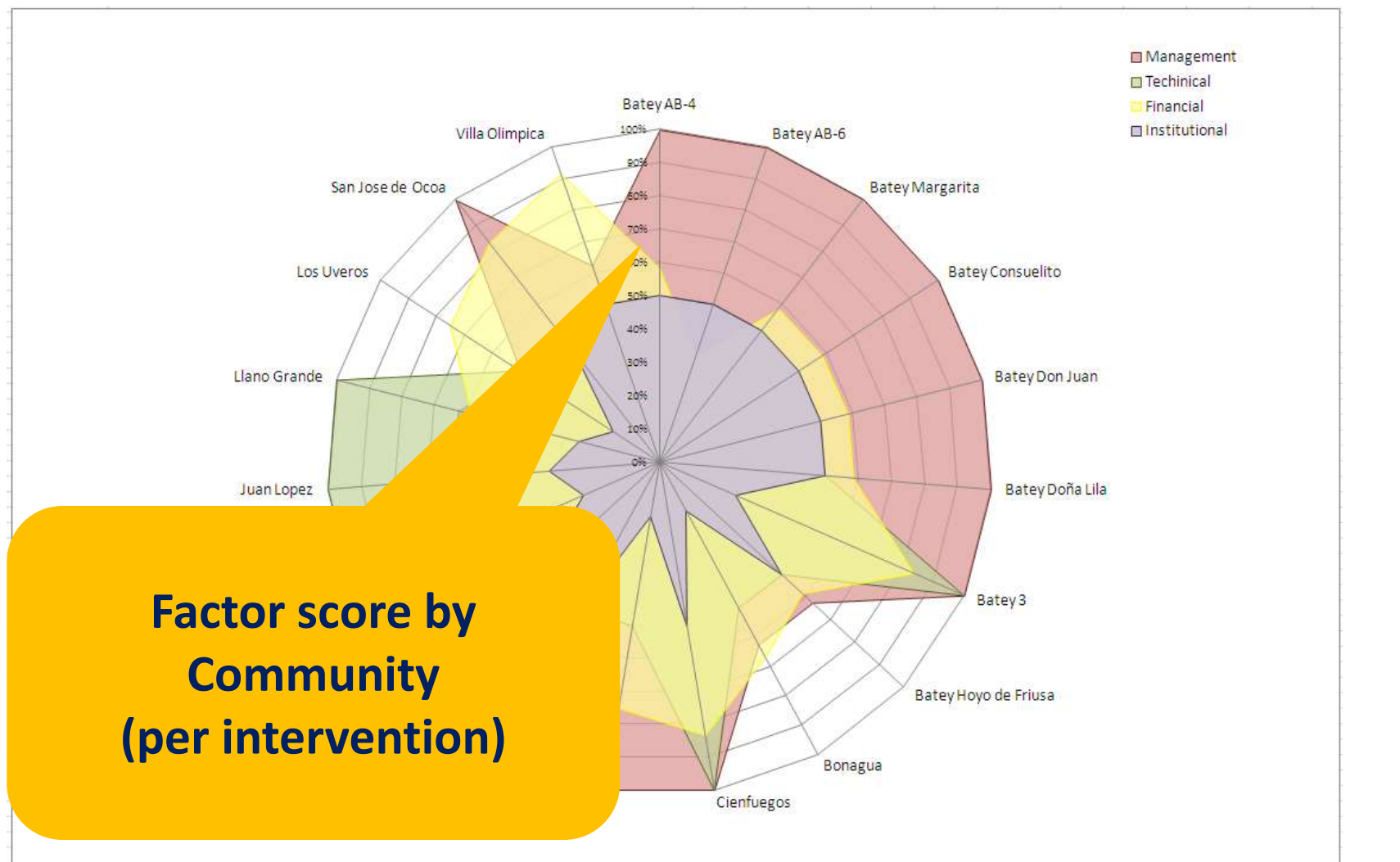


# Data Analysis and Results

Important to consider:

- ✓ triangulation rules
- ✓ weighting factors (if and when)
- ✓ generating graphs (manually done)

# Results by Community

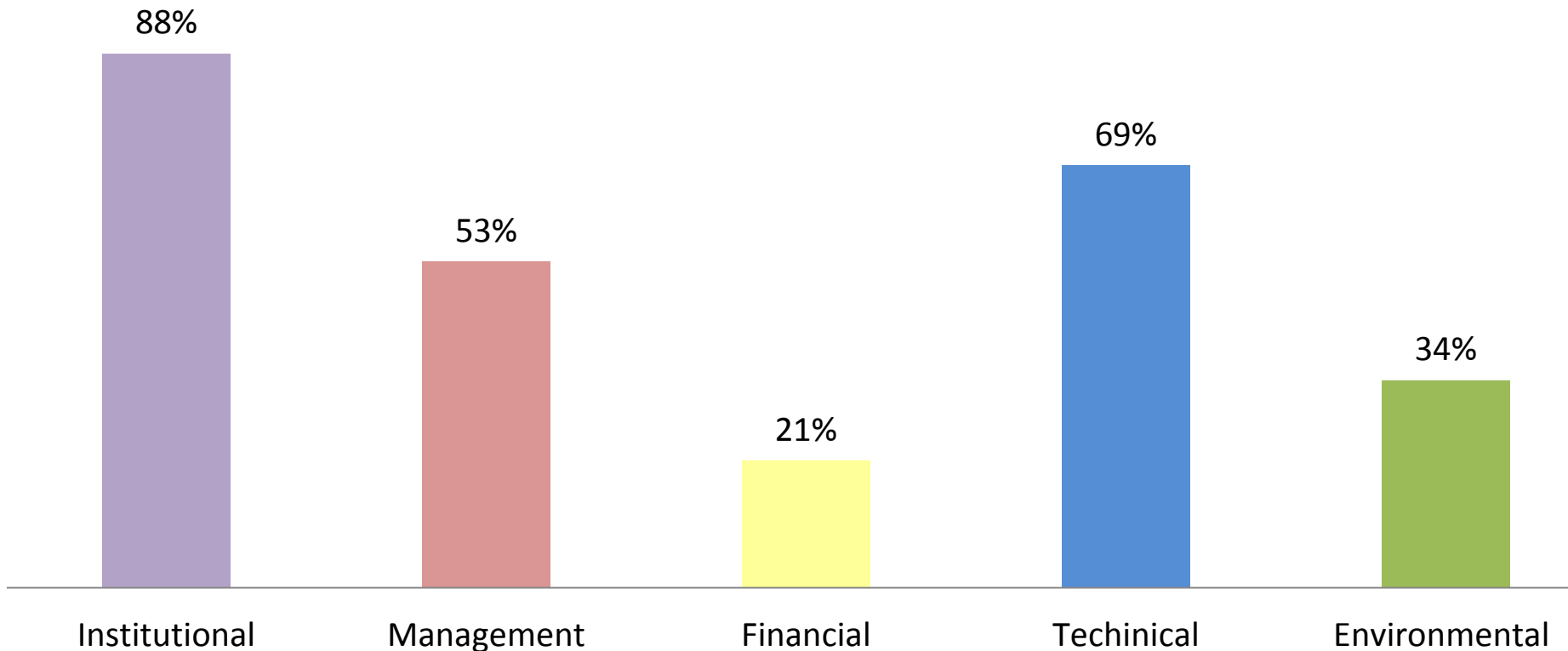


**Factor score by Community (per intervention)**



# Results by Intervention Type

## Overall Sustainability Index Score Community Reticulated System



# Lessons learned from first iteration of Sustainability Index Tool



# Lessons Learned

- important to dedicate **sufficient time and resources** to contextualization
- **qualitative information** compliments quantitative outputs of the tool
- ***Sequencing matters*** – critical first step is to survey at higher levels to enable further contextualisation of lower level surveys
- Possible to collect **national level data** as a “**desk based**” exercise

# Lessons Learned - Costs

- Excluding the cost of designing the tool, the assessment costs are ~ **\$50,000 - \$60,000 per sample country**
- Order of magnitude country cost - sampling of 5 interventions types in Ghana and 4 in the Dominican Republic
- Total number of beneficiaries of about 100,000 in each country and sample confidence level of 7%

# THANK YOU

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For further information see:

<http://www.washplus.org/rotary-usaid>

OR

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